EPA Reg. No. 90930-3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

June 17, 2016

N. Bhushan Mandava
Agent for Miller Chemical and Fertilizer, LLC
Mandava Associates, LLC
1050 Connecticut Avenue, N.W., Suite 500
Washington, D.C. 20036

Subject: Miller Chemical and Fertilizer, LLC's Response to Storage Stability and Corrosion Characteristics Terms of Registration

Product Name (EPA Registration Number)	Application Date	EPA Receipt Date	Term(s) of Registration (Guideline No.)	OPP Decision Number
Cytokinin Bioregulator Concentrate 90930-3	March 7, 2016	March 10, 2016	Storage Stability (Guideline No. 830.6317) Corrosion Characteristics (Guideline No. 830.6320)	514856

Dear Dr. Mandava,

On September 10, 2015, the U.S. Environmental Protection Agency (EPA) issued a Registration Notice for Cytokinin Bioregulator Concentrate (EPA Reg. No. 90930-3). Term #2 of the Registration Notice required that Miller Chemical and Fertilizer, LLC, provide acceptable studies to the EPA within 18 months of the date of the registration.

On March 10, 2016, the EPA received data from Miller Chemical and Fertilizer, LLC, that responded to the data terms of the Registration Notice. In a memorandum dated June 8, 2016, the EPA rated the storage stability and corrosion characteristics rationale (*no MRID number assigned*) as unacceptable (see enclosure). Thus, you have not fulfilled Term #2 of the September 10, 2015, Cytokinin Bioregulator Concentrate Registration Notice.

As discussed in a conference call with you on June 2, 2016, EPA agreed that Miller Chemical and Fertilizer, LLC, may conduct analysis of biological activity at the storage intervals of 0 day and 12 month to satisfy the storage stability data requirements for this product. EPA further recommends that Miller Chemical and Fertilizer, LLC, provide additional data points of biological activity, if possible; in particular, a data point collected at the 6-month storage interval will allow for a better understanding of the integrity of the product overtime.

If you have any questions, please contact Gina Burnett of my team by phone at (703) 605-0513 or via email at burnett.gina@epa.gov.

Sincerely,

Andrew Bryceland, Team Leader
Biochemical Pesticides Branch
Biopesticides and Pollution
Prevention Division (7511P)
Office of Pesticide Programs

Enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

MEMORANDUM

DATE: June 08, 2016

SUBJECT: Cytokin Bioregulator Concentrate (EPA Reg. #: 90930-3). Review of Waiver Request of Storage Stability and Corrosion Characteristics Studies

Decision Number: 514856
DP Number: 432878
EPA Reg. #: 90930-3
Chemical Class: Biochemical
PC Code: 116801
MRID: None

FROM: Manying Xue, Chemist
BPB/BPPD (7511P)

Through Russell S. Jones, Ph.D., Senior Biologist /s/
Biochemical Pesticides Branch
Biopesticides & Pollution Prevention Division (7511P)

TO: Gina Burnett, Regulatory Action Leader
BPB/BPPD (7511P)

~~***CONTAINS CONFIDENTIAL BUSINESS INFORMATION***~~

Action Requested:

On behalf of Miller Chemical and Fertilizer, LLC, Mandava Associates, LLC has submitted a waiver request for the studies of storage stability and corrosion characteristics in support of registration of for the end use product, Cytokin Bioregulator Concentrate (EPA Reg. #: 90930-3).

BPPD has reviewed and evaluated the waiver request for studies of storage stability and corrosion characteristics. The decisions are made to reflect the current OCSPP's policies.

Conclusions:

1. The submitted waiver request for storage stability and corrosion characteristics for the end use product, Cytokin Bioregulator Concentrate (EPA Reg. #: 90930-3) is **UNACCEPTABLE.** Based on the conference call with the registrant on 06/02/16, BPPD

agreed that the registrant can conduct analysis of biological activity at the storage intervals of 0 day and 12 month to replace the studies of storage stability and corrosion characteristics for the end use product, Cytokin Bioregulator Concentrate. However, BPPD recommends that registrant provides more data point of biological activity, at least one more point at 6 month storage interval in order to better understand the integrity of the product overtime.

Study Summary

The rationales of the waiver request are as follows:

The total amount representing four ingredients is 0.01%. Additionally, the presence of these amounts is based on biological activity, not on the basis of chemical composition of these ingredients. According to label ingredient statement [and also Confidential Statement of Form u l a (CSF)], it is difficult for the registrant to find out how much each active ingredient is present in the registered product.

Restated, the total amount of active ingredients in the product is 10 mg per l 00 g of the subject product. This amount is based solely on biological activity.

The product is made up or four active ingredients. Although the analytical method (chemical assay) is not stipulated, the registrant has a choice lo select an appropriate analytical method. However, the registrant does not k now the amount of each kinetin constituent present in the registered product. What the registrant knows is ONLY the total kinetin which is 0.01%. in other words, the chemical composition is undefined; however, the total kinetin is defined on the basis of biological activity. That means the biological activity is not known for each ingredient; and the biological activity represents the total sum for all four ingredients.

To determine the percent composition for each ingredient at the following time intervals: 1) Analysis at 0 time (Initial reading) - after establishing a baseline for Als, The test facility needs to develop standards for each ingredient; Test sample analysis will be after 1, 3, 6, 12 months storage. There will be a total of 5 sample analyses. In other words, the test facility will have to conduct analysis five times (as shown above).

Biological Assays - Theoretically, it can be done. Previously, the registrant used a University laboratory (Rutgers University). This lab can analyze the test sample(s) by using Radish Cotyledon Bioassay for measuring the total cytokinin (kinetin) content. Please be advised that in this assay, the activity is measured for all ingredients (mixture), not for individual components. This is only a qualitative test.

cc G.Burnett; BPPD Chron File; OHAD/ARS
M. Xue, BPPD, 06/08/16

Receipt for Section 3

Print Letter | Enter More Information | Tracking

S: 982720 Milestone Email:

Regulatory Type: Product Registration - Section 3

Resubmission: Yes / No (selected: No)

Fee For Service: Yes / No (selected: No)

Billable: Yes / No (selected: Yes)

Application Type: Amendment

Company: 90930 MILLER CHEMICAL & FERTILIZER, LLC

Risk Manager: Biologicals & Pollution Prevention Division, PM Team 91

Product #: 90930-3 Product Name: CYTOKIN BIOREGULATOR CONCENTRATE

Override#

Me Too Section3: 90022-1 Me Too Product Name: CYTOGRO HORMONE BIOSTIMULANT

Application Date:	07-Mar-2016	OPP Rec'vd Date:	10-Mar-2016
Front End Date:	10-Mar-2016	Risk Manager Send Date:	11-Mar-2016
FFS Due Date:		Negotiated Due Date:	
OPP Target Date:			

Receipt Content	Des
Data Waiver Request	

View/Edit

Fast Track New Ingredient

Receipt Description:

SS/CC data waiver request

New Ingredient Request Date

New Ingredient Received Date

Form A Signature Date Form B Signature Date

scanned 4/12/2016

due back 6/12/2016

non-PRIA due date 6/28/2016

MANDAVA ASSOCIATES, LLC

CONSULTANTS IN SCIENCE, TECHNOLOGY AND REGULATORY AFFAIRS
1050 CONNECTICUT AVENUE, N.W., SUITE 500, WASHINGTON, DC 20036
TELEPHONE: (202)-223-1424/1747 ≅ TELEFAX: (202)-223-0141≅ E-Mail: mandava@compuserve.com

Hand Delivered

March 7, 2016

Ms. Linda A. Hollis (PM 91)
Biochemical Pesticide Branch
Biopesticides and Pollution Prevention Division
Office of Pesticide Programs
U.S. Environmental Protection Agency
Washington, D.C. 20460

SUBJECT: **Waiver Request for Combined One-Year Storage Stability and Corrosion Characteristics Study**
(OCSPP Guidelines 830.6317 and 830.63200)

Product Name:	**Cytokin® Bioregulator Concentrate**
EPA Reg. No:	90930-3
Active Ingredient:	Mixed Cytokinins as Kinetin
Company Name:	Miller Chemical & Fertilizer, LLC
Company Number:	90930

Dear Ms. Hollis:

On behalf of Miller Chemical and Fertilizer, LLC ("**Miller Chemical**" or "**registrant**"), we are requesting the Agency to waive the combined one-year storage stability and corrosion characteristics study (OCSPP Guidelines 830.6317 and 830.63200) for Cytokin® Bioregulator Concentrate (EPA Reg. No.: 90930-3). We are providing the bases for waiver request as noted below:

1. ***What are the active ingredients in this product (EPA Reg. No.: 90930-3)?***
As stated on the label ingredient statement for the subject product, "Cytokin® Bioregulator Concentrate" (EPA Reg. No.: 90930-3), the active ingredients (AIs) include cytokinin, as kinetin, **based on biological activity** which represent 0.01% in the formulation.

This amount (0.01%) represents the following four ingredients:

6-(4-hydroxy-3-methylbut-*trans*-2-enylamino)-purine
N^6-methylaminopurine
N^6-dimethylaminopurine
N^6-isopentenylaminopurine

Please be advised that the total amount representing four ingredients is **0.01%.** Additionally, the presence of these amounts is based on biological activity, **not** on the basis of chemical composition of these ingredients. According to label ingredient statement [and also Confidential Statement of Formula (CSF)], it is difficult for the registrant to find out how much each active ingredient is present in the registered product. [In other words, there is no breakdown for these ingredients provided.]

Restated, the total amount of active ingredients in the product is 10 mg per 100 g of the subject product. This amount is based **solely** on biological activity.

2. ***What are the requirements for storage stability and corrosion characteristics study (OCSPP Guidelines 830.6317 and 830.63200) for the subject product (EPA Reg. No.: 90930-3)?***

2.1. Re. Analysis - The Agency requires the registrant to conduct one year study under ambient (or warehouse) conditions following OCSPP Guidelines 830.6317 and 830.63200 for the subject product (EPA Reg. No.: 90930-3). [The registrant notes that BPPD does not accept the combined accelerated storage stability and corrosion characteristics study, although other divisions in OPP accept such a study and each request is reviewed on a case by case basis.]
The protocols under the OCSPP Guidelines generally allow the registrant to adapt chemical assays (or biological assays if appropriate) to determine the stability of the active ingredients under the above-mentioned storage conditions.
As stated above, the product is made up of four active ingredients. Although the analytical method (chemical assay) is not stipulated, the registrant has a choice to select an appropriate analytical method. However, the registrant does not know the amount of each kinetin constituent present in the registered product. What the registrant knows is ONLY the total kinetin which is 0.01%. In other words, the chemical composition is undefined; however, the total kinetin is defined on the basis of biological activity. That means the biological activity is not known for each ingredient; and the biological activity represents the total sum for all four ingredients.
The registrant is also aware that this test must be conducted under GLP.

2.2. Storage stability study-

2.2.1. Chemical Assays - We have contacted one testing facility. According to that facility, the analyses can be done by using sophisticated analytical methods such hyphenated methods as Gas Chromatography-Mass Spectrometry (GC-MS) or Liquid Chromatography -Mass Spectrometry (LC-MS). These tests seem to be prohibitively expensive.

How to conduct the study? In order to undertake this work, the test facility will have to develop an appropriate (suitable) analytical method, validate it and determine the percent composition for each ingredient at the following time intervals:

1) Analysis at 0 time (Initial reading) – after establishing a baseline for AIs, the test facility needs to develop standards for each ingredient;

2) Test sample analysis after 1 month storage
3) Test sample analysis after 3 months storage
4) Test sample analysis after 6 months storage
5) Final sample analysis after 12 months storage

There will be a total of 5 sample analyses. In other words, the test facility will have to conduct analysis five times (as shown above).

Estimated Costs - The test facility will not provide the cost estimate unless the registrant is committed. This is because, it is not known at this time how much of the each ingredient is present in the formulated product. It is also not known whether any of the ingredients are within the limit of detection. Furthermore, it is not known how stable are those ingredients under the storage conditions.
Because of these reasons, the registrant would expect that the costs will be more than $200,000.
Because of so many uncertainties, we request the Agency not to recommend this approach.

2.3.1. Biological Assays – Theoretically, it can be done. Previously, the registrant used a University laboratory (Rutgers University). This lab can analyze the test sample(s) by using Radish Cotyledon Bioassay for measuring the total cytokinin (kinetin) content. Please be advised that in this assay, the activity is measured for all ingredients (mixture), not for individual components. This is only a qualitative test.

During the Registration process, we had a conference call with the Agency on July 20, 2015 and during the conference call it was explained in detail for the Enforcement Analytical Methods (OCSPP Guideline 830.1800[40 CFR 158.350]) we referenced the Radish Cotyledon Bioassay for measuring the total cytokinin (kinetin) content. Due to the very negligible levels it is very difficult to conduct a proper Biological Assay. The Agency had **approved** this request and that the Registrant met the Guideline requirements.

As stated above, the chemical composition (or chemical makeup) is unknown. Please be advised that the stability of each ingredient in the product is difficult to determine by using this assay. The registrant requests the Agency not to recommend this biological assay for storage stability study.

2.4 Rationale for Waiver Request– If each active ingredient composition is known and can be measured precisely by chemical assays, it is worth conducting the test Since the ingredient composition is based on biological assays and their ingredients composition is unknown, it is not recommended because the results we get from bioassays are only qualitative. Based on the qualitative data, it is difficult to assess whether the product is stable or not.

2.5. Corrosion Characteristics – The method proposed is to determine corrosion of the test article to packaging material. We do not see any issue for conducting the study. [Since the test material is stored in plastic containers, it is very unlikely that the AIs in the test article will exhibit any corrosion issues to packaging materials.]

Benefit of Conducting Storage Stability Test– Considering the resources and the outcome along with the difficulty in conducting the required proper testing and with such negligible levels that are obtained with the bioassays, we feel that it is not imperative for the registrant to have to conduct the storage stability test for this product.

In view of the above mentioned reasons, we kindly request the Agency to waive the study.

Sincerely,

N. Bhushan Mandava

N. Bhushan Mandava
Agent for Miller Chemical and Fertilizer, LLC

Inert ingredient information may be entitled to confidential treatment

PROCESSING REQUEST

Reg # 90930-3 **Decision #** 516938

Description: addition of inert [redacted]

Electronic Label & Letter (see PPLS): OR **Non Electronic Label & Letter** (Scanning required):

☒ Dated: MAY 13 2016 ☐ Dated:

Only one label type should be selected

Other Materials Sent (see jacket):

☒ New CSF(s) Dated: MAY 1, 2016

☐ Other:

File this coversheet and attached materials in the jacket. It must be well organized and clipped together, NOT STAPLED. Then give the jacket with the coversheet and materials to staff in the Information Services Center (ISC) (Room S-4900). If a jacket is full or only available as an image, please file materials in a new jacket and bring it down to the (ISC). For further information please call 703-605-0716.

Reviewer: C. Kendrick

Division: BPPD

Phone: 703 347 0468 **Date:** 5/16/2016

Inert ingredient information may be entitled to confidential treatment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

May 13, 2016

N. Bhushan Mandava
Agent for Miller Chemical & Fertilizer, LLC
c/o MANDAVA ASSOCIATES, LLC
1050 CONNECTICUT AVE., NW, SUITE 1000
WASHINGTON, DC 20036

Subject: Formulation Notification per Pesticide Registration Notice (PRN) 98-10 – addition of inert ingredient [redacted]
Product Name: Cytokinin Bioregulator Concentrate
EPA Registration Number: 90930-3
Application Date: 2 May 2016
OPP Decision Number: 516938

Dear Dr. Mandava:

The U.S. Environmental Protection Agency (EPA) is in receipt of your application for notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Biopesticides and Pollution Prevention Division (BPPD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

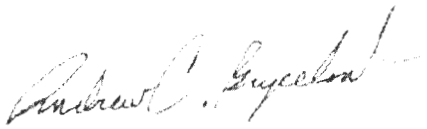
The Confidential Statement of Formula (CSF) submitted with this application has been stamped "Notification" and will be placed in our records. Please note that the record for this product currently contains the following acceptable CSFs:

- Basic CSF dated 08/25/2015
- Alternate CSF #1 dated 05/01/2016

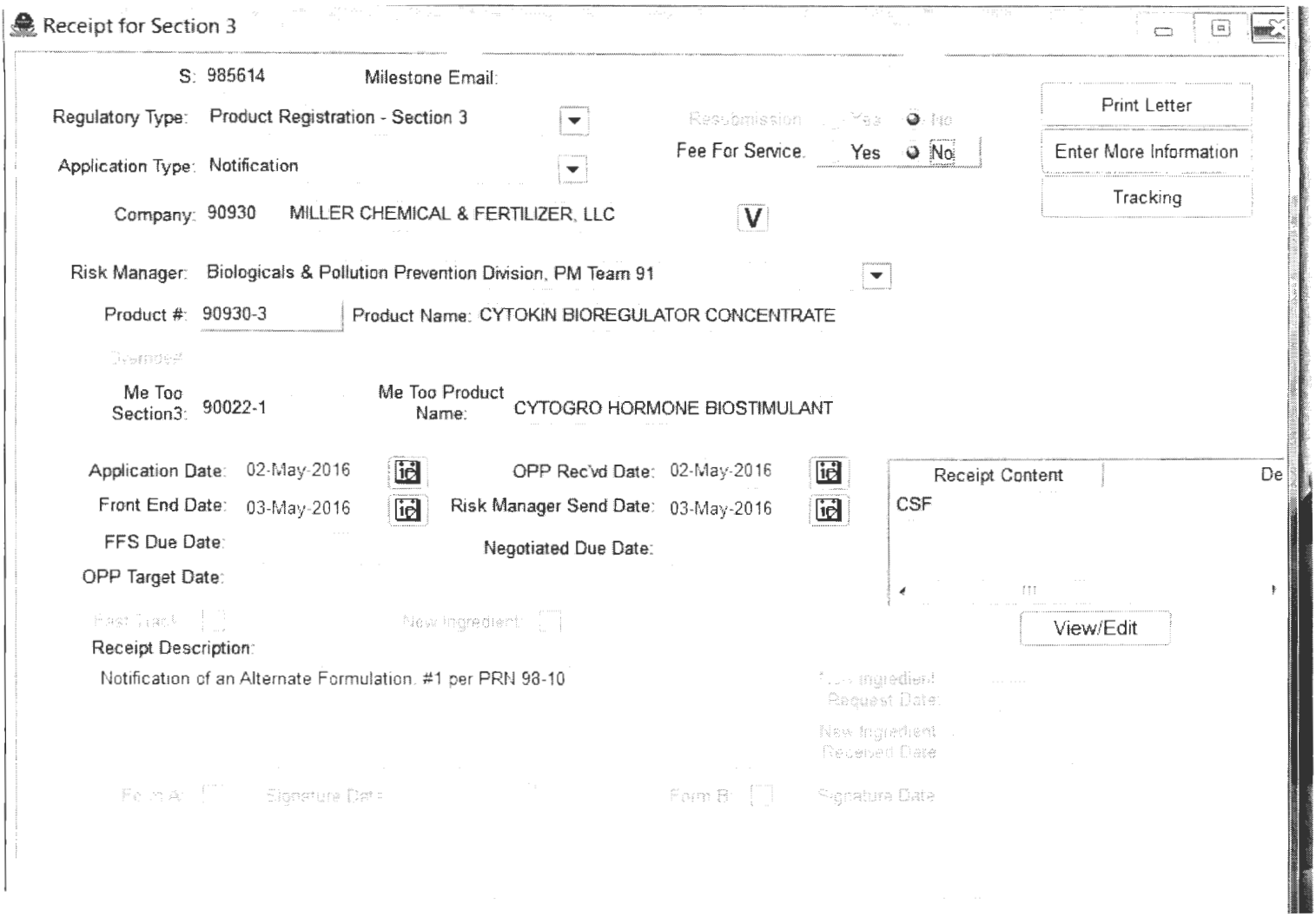
Any CSFs other than those listed above are superseded/no longer valid.

If you have any questions, please contact Cody Kendrick of my team by phone at (703) 347-0468 or via email at kendrick.cody@epa.gov.

Sincerely,



Andrew Bryceland, Team Leader
Biochemical Pesticides Branch
Biopesticides and Pollution
Prevention Division (7511P)
Office of Pesticide Programs


Receipt for Section 3
S: 985614
Milestone Email:
Regulatory Type: Product Registration - Section 3
Application Type: Notification
Resubmission: Yes No
Fee For Service: Yes No
Print Letter
Enter More Information
Tracking
Company: 90930 MILLER CHEMICAL & FERTILIZER, LLC
V
Risk Manager: Biologicals & Pollution Prevention Division, PM Team 91
Product #: 90930-3
Product Name: CYTOKIN BIOREGULATOR CONCENTRATE
Me Too Section3: 90022-1
Me Too Product Name: CYTOGRO HORMONE BIOSTIMULANT
Application Date: 02-May-2016
OPP Rec'vd Date: 02-May-2016
Front End Date: 03-May-2016
Risk Manager Send Date: 03-May-2016
FFS Due Date:
Negotiated Due Date:
OPP Target Date:
Receipt Content
De
CSF
View/Edit
Receipt Description:
Notification of an Alternate Formulation. #1 per PRN 98-10

Copy V.A. 3.

Please read instructions on reverse before completing form. Form Approved. O.M.B. No. 2070-0060. Approval expires 2-28-95

EPA

United States
Environmental Protection Agency
Washington, DC 20460

- [ ] **Registration**
- [ ] **Amendment**
- [x] **Other**

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number	2. EPA Product Manager	3. Proposed Classification
90930-3	Linda Hollis	[x] None [ ] Restricted
4. Company/Product (Name)	**PM#**	
Cytokin® Bioregulator Concentrate	91	

5. Name and Address of Applicant *(Include ZIP Code)*

Miller Chemical & Fertilizer, LLC
P.O. Box 333, 120 Radio Road
Hanover, PA 17331

[ ] *Check if this is a new address*

6. Expedited Reveiw. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to:

EPA Reg. No. _____

Product Name _____

Section - II

- [ ] Amendment - Explain below.
- [ ] Resubmission in response to Agency letter dated _____
- [x] Notification - Explain below.
- [x] Final printed labels in repsonse to Agency letter dated _____
- [ ] "Me Too" Application.
- [ ] Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

1) Notification per PR Notice 98-10.
This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.
2) Please address all correspondence to N. Bhushan Mandava, Mandava Associates, LLC, 1050 Connecticut Avenue, N.W., Suite 500, Washington, D.C. 20036. Telephone Number (202) 223 - 1424. Fax Number (202) 223 - 0141 and email: mandava@compuserve.com.

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
[ ] Yes [ ] No	[ ] Yes [ ] No	[ ] Yes [ ] No	[ ] Metal [ ] Plastic [ ] Glass [ ] Paper [ ] Other (Specify) _____
***Certification must be submitted**	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
[ ] Label [ ] Container		[ ]

6. Manner in Which Label is Affixed to Product [ ] Lithograph [ ] Paper glued [ ] Stenciled [ ] Other _____

Section - IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. (Include Area Code)
N. Bhushan Mandava	Agent for Miller Chemical & Fertilizer, LLC	202-223-1421

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowlingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received **(Stamped)**

2. Signature	3. Title	5. Date
N. Bhushan Mandava	Agent for Miller Chemical & Fertilizer, LLC	May 2, 2016
4. Typed Name		
N. Bhushan Mandava		

EPA Form 8570-1 (Rev. 3-94) Previous editions are obsolete. White - EPA File Copy (original) Yellow - Applicant Copy

Inert ingredient information may be entitled to confidential treatment

MANDAVA ASSOCIATES, LLC

CONSULTANTS IN SCIENCE, TECHNOLOGY AND REGULATORY AFFAIRS
1050 CONNECTICUT AVENUE, N.W., SUITE 500, WASHINGTON, DC 20036
Telephone: (202)-223-1424/1747 ≅● Fax: (202)-223-0141 ≅● E-MAIL: Mandava@compuserve.com

HAND DELIVERED

May 2, 2016

Ms. Linda Hollis
Chief, Biochemical Pesticide Branch
Biopesticides and Pollution Prevention Division (7504P)
Office of Pesticide Programs
U.S. Environmental Protection Agency
Washington, DC 20460

SUBJECT: **Notification of Cytokin® Bioregulator Concentrate**
Product Name: Cytokin® Bioregulator Concentrate
EPA Reg. No.: 90930-3

Company: Miller Chemical and Fertilizer, LLC

Dear Ms. Hollis:

This letter is for submission of a Notification for 'Cytokin® Bioregulator Concentrate (EPA Reg. No.: 90930-3) for registration of an **Alternate Formulation #1** to include [redacted].

In the notification we are adding the source for [redacted] in Cytokin® Bioregulator Concentrate as follows:

Proposed Product: [redacted]

Proposed source company:

Please be advised that the physical and chemical characteristics of the amended formulation (see attached CSF) will be unaffected or unchanged as a result of the change of ingredients.

Inert ingredient information may be entitled to confidential treatment

The addition of [redacted] in Cytokin® Bioregulator Concentrate will not affect the active ingredients, with no change in approved label ingredient statements.

We request the agency to approve the change as a Notification.

In support of the amendment to Cytokin® Bioregulator Concentrate (EPA Reg. No.: 90930-3) we are submitting the following information:

1) Application for Registration (EPA Form 8570-1)
2) Currently Approved Confidential Statement of Formula (EPA Form: 8570-4)
3) 2 copies of Revised Confidential Statement of Formula (EPA Form: 8570-4)

On behalf of Miller Chemical and Fertilizer, LLC, we request you to approve the Notification for Cytokin® Bioregulator Concentrate (EPA Reg. No.: 90930-3).

If there are further questions, Please contact us.

Sincerely,

N. Bhushan Mandava, Ph.D.
Agent for Miller Chemical & Fertilizer, LLC

PROCESSING REQUEST

Reg # 90930-3 **Decision #** 505226

Description: New Product Registration

Electronic Label & Letter (see PPLS):	OR	**Non Electronic Label & Letter** (Scanning required):
☒ Dated: 9/10/2015		☐ Dated:

Only one label type should be selected

Other Materials Sent (see jacket):

☒ New CSF(s) Dated: 8/25/2015

☐ Other:

File this coversheet and attached materials in the jacket. It must be well organized and clipped together, NOT STAPLED. Then give the jacket with the coversheet and materials to staff in the Information Services Center (ISC) (Room S-4900). If a jacket is full or only available as an image, please file materials in a new jacket and bring it down to the (ISC). For further information please call 703-605-0716.

Reviewer: G. Burnett

Division: BPPD

Phone: 703-605-0513 **Date:** 9/10/2015

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Biopesticides and Pollution Prevention Division (7511P)
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

NOTICE OF PESTICIDE:
_X_ Registration
___ Reregistration
(under FIFRA, as amended)

EPA Reg. Number:	Date of Issuance:
90930-3	9/10/2015

Term of Issuance:
Unconditional

Name of Pesticide Product:
Cytokin Bioregulator Concentrate

Name and Address of Registrant (include ZIP Code):
Miller Chemical & Fertilizer, LLC
P.O. Box 333
Hanover, PA 17331

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Biopesticides and Pollution Prevention Division prior to use of the label in commerce. In any correspondence on this product, always refer to the above EPA Registration Number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA or the Act).

Registration is in no way to be construed as an endorsement or recommendation of this product by the U.S. Environmental Protection Agency (EPA). In order to protect health and the environment, the Administrator, on his or her motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under the Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration or registration review of your product when the EPA requires all registrants of similar products to submit such data.

2. Submit storage stability and corrosion characteristics (Guidelines 830.6317 and 830.6320) data as these data requirements are not satisfied. A one-year study is required to satisfy these data requirements. You have 18 months from the date of this registration to provide these data to the EPA.

Signature of Approving Official:

Andrew C. Bryceland

Andrew Bryceland, Team Leader
Biochemical Pesticides Branch
Biopesticides and Pollution Prevention Division (7511P)
Office of Pesticide Programs

Date:
9/10/2015

EPA Form 8570-6

3. Make the following labeling change before you release this product for shipment:

    - Revise the EPA Registration Number to read, "EPA Reg. No. 90930-3."

4. Submit one (1) copy of the final printed labeling for the record before you release this product for shipment.

Should you wish to add/retain a reference to your company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the EPA. If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the EPA find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA-approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6. A stamped copy of the labeling is enclosed for your records. Please also note that the record for this product currently contains the following acceptable Confidential Statement of Formula (CSF):

- Basic CSF dated 08/25/2015

Any CSFs other than those listed above are superseded.

If you have any questions, please contact Gina Burnett of my team by phone at (703) 605-0513 or via email at burnett.gina@epa.gov.

Sincerely,

Andrew C. Bryceland

Andrew Bryceland, Team Leader
Biochemical Pesticides Branch
Biopesticides and Pollution
Prevention Division (7511P)
Office of Pesticide Programs

Enclosure

ACCEPTED
09/10/2015
Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under
EPA Reg. No. 90930-3

CYTOKIN® BIOREGULATOR CONCENTRATE

ACTIVE INGREDIENTS:

Cytokinin, as kinetin, based on biological activity.....0.01%

Includes:

6-(4-hydroxy-3-methylbut-*trans*-2-enylamino)-purine
N^6-methylaminopurine,
N^6-dimethylaminopurine,
N^6-isopentenylaminopurine

INERT INGREDIENTS.....**99.99%**

TOTAL.....100.00%

CAUTION

KEEP OUT OF REACH OF CHILDREN

Si usted no entiende la etiqueta, busque a alguien pare que se la explique a usted en detalle.
(if you do not understand the label, find someone to explain it to you in detail)

FIRST AID	
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If Inhaled	• Move person to fresh air. • If person not breathing, call 911 or an ambulance then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call poison control center or doctor for further treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call poison control center or doctor for treatment advice.
Have a product container or label with you when calling a poison control center or doctor, or going for treatment. You may also call 1-800-222-1212 for emergency medical treatment information.	

For chemical emergency: spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300

Manufactured for:
Miller Chemical & Fertilizer, LLC
P.O. Box 333, 120 Radio Road
Hanover, PA 17331

NET CONTENTS:

EPA Reg. No. 90930- EPA Est. No.

Batch Code:_____

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear long-sleeved shirt and long pants and shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining personal protective equipment. If no such instructions for washables, use detergent and hot water. Keep and wash personal protective equipment separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR part 170.240(d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not contaminate water when disposing of equipment washwater or rinsate.

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Before using Cytokin® Bioregulator Concentrate, read and follow the precautions appearing on the label.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State of Tribal agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170.

This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), notification to workers and restricted-entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, waterproof gloves and shoes plus socks.

NON-AGRICULTURE USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Reentry Statement: Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treated area until spray has dried.

Chemigation system

Apply Cytokin® Bioregulator Concentrate only through the following types of systems: sprinkler, including center pivot, lateral move, end tow, side roll, traveler, big gun, solid set, or hand move; or drip (trickle) irrigation systems. Do not apply this product through any other type of system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable about the chemigation systems and responsible for its operation, or under supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone (RPZ), back flow preventer or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the

public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid- operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Sprinkler Chemigation: The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

The pesticide injection system must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when speeds favor drift beyond area intended for treatment.

Supply pesticide tank agitation, especially if product is to sit in tank for over 6 hours.

Apply Cytokin® Bioregulator Concentrate continuously for the duration of water application or with

the first quarter to one-half of the watering period.

Mixing instructions: Fill supply tank to 1/4 to 1/2 full. Add Cytokin® Bioregulator Concentrate and complete filling.

Cytokin® Bioregulator Concentrate
General Information

Cytokin® Bioregulator Concentrate is a plant growth regulator product containing cytokinin plant hormone formulated to improve nutrient utilization, promote bud initiation and development, flower set and retention, improve fruit size, and increase efficiency of production.

Use Cytokin® Bioregulator Concentrate in combination with a well-balanced fertility program and good management practices. The Company recommends the use of soil and tissue testing, and additional nutrients and micronutrients as needed. For maximum benefit, add 0.1 to 0.25 lbs. Calcium to spray solution with a complete fertilizer, such as Nutrileaf (20-20-20) or Sol-U-Gro® (12-48-8) along with chelated micronutrients.

APPLICATION INSTRUCTIONS

SHAKE WELL BEFORE USING

Good growing conditions are necessary for the maximum utilization of Cytokin® Bioregulator Concentrate. For maximum gain from the application of Cytokin® Bioregulator Concentrate always use a well-balanced plant nutrient program. This product, in any of its applications, is not intended to replace fertilizer or to supply nutrients that would normally be added in a conventional fertility program. Timing of the foliar spray application is very important. Always follow directions precisely. Do not apply when temperatures are above 95°F (36°C) or within eight hours of forecast rain.

For General Use, mix 1 oz. Cytokin® Bioregulator Concentrate with 4 gallons water and spray plant foliage to dampness, almost to runoff. Apply this product in the morning or late afternoon.

For larger areas where aircraft or power driven sprayers are used to apply the spray, follow the specific use rates below. Apply with sufficient water to get thorough foliage coverage, 3 to 10 gallons water per acre for aircraft sprayers and 10 to 100 gallons water per acre for ground driven spray equipment. It is acceptable to use Cytokin® Bioregulator Concentrate with a surfactant. This product can be applied as a mixture with most pesticides. Always run a "jar compatibility test" and treat a small area with any new mixture to test the chemical and crop reaction before large field application.

For transplanting: Drench soil around each plant with a mixture of 1 fl. oz. Cytokin® Bioregulator Concentrate in 4 gallons of water or transplant solution. Spray seedlings with a solution of 1 fl. oz. Cytokin® Bioregulator Concentrate in 4 gallons of water or ½ to one pint per acre 2 to 4 weeks after transplanting and follow with subsequent sprays at instructed intervals throughout the growing season.

Chemigation application: Dilute 1 part Cytokin® Bioregulator Concentrate with at least 5 parts water before adding to the supply tank. Ensure continuous agitation of supply tank during application or injection into the chemigation system. When applying Cytokin® Bioregulator Concentrate through a drip system, apply Cytokin® Bioregulator Concentrate with the first ¼ inch equivalent water. In sprinkler systems, apply this product over the watering cycle.

CROP USE GUIDELINES

For local use recommendations for major and minor crops, contact your PCA or local distributor representative.

Include Calcium EDTA or other highly available calcium source in the tank mix of all foliar applications.

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Asparagus	16 fl. oz.	Spray Cytokin® Bioregulator Concentrate to fern about 2 weeks after last harvest and repeat monthly during fern growth.
Beans – fresh: Edible, green, etc. And peas	8 fl. oz.	First: apply at the 2 to 3 trifoliate leaf stage. Second: 7 to 15 days later.
Beans and peas – dry	8 fl. oz.	Apply when plants have developed 3 to 7 trifoliate leaves, again at early bloom, and again at the beginning of pod fill.
Bell Peppers Chile Peppers Eggplant	8 fl. oz.	Apply at the 6 to 8 leaf stage. Follow with applications at 7 to 14 day intervals for a total of four to six applications.
Broccoli, Cabbage, Cauliflower, Celery, Lettuce	8 fl. oz.	Make 4 to 6 applications at two week intervals beginning at the 3 leaf stage. Applications can be divided to provide weekly applications of 2 to 4 fl. oz./acre applied with other spray or mixtures of insecticides or foliar nutrients.
Carrot and Other root crops	16 fl. oz.	Apply when seedlings have 3 to 6 leaves.
Corn (field)	8 fl. oz.	Apply to prolific (multiple ear) varieties only. Make first application at the 8 to 10 leaf stage. Follow with second application at tasseling.
Corn (sweet and popcorn)	8 fl. oz.	Apply at the 5 to 7 leaf stage. Follow with second application at tasseling.
Cotton	2 to 4 fl. oz. OR 8 fl. oz.	Pinhead square: Apply weekly for 4 weeks. Adjust for band width; OR First Bloom: Apply at first white flower and again two weeks later (mid bloom)
Cotton (stripper)	8 fl. oz.	Make single application during first 2 to 3 weeks of bloom

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Cucumber	4 to 32 fl. oz.	Broadcast spray application: To promote early female vigor and enhance yields, apply at the 3 to 6 leaf stage and continue at weekly to 14 day intervals for four applications. Begin banded rates at the 3 to 6 leaf stage at the rate of 4 to 6 fl. oz. for the first application.
Forage crops - legumes or grasses	8 to 16 fl. oz.	Spray Cytokin® Bioregulator Concentrate 4 to 6 weeks after emergence and monthly thereafter. Mature Crop: Spray this product as spring growth begins, 1 week before harvest and again 2 weeks after cutting.
Seed Production	8 to 16 fl. oz.	On established crops: spray Cytokin® Bioregulator Concentrate beginning of inflorescence development (early tillering) and again 2 weeks later. Spray 8 to 16 fl. oz./acre at the beginning of bloom.
Grapes	4 to 16 fl. oz.	General: Cytokin® Bioregulator Concentrate at 4 fl. oz. with foliar nutritional or pesticidal sprays. Sizing: Apply as a tank mix with all Gibberellic Acid sizing sprays. Harvest: Apply this product with high potash fertilizer at 2 to 12 days before harvest to enhance sugar accumulation.
Melons (Cantaloupe, Muskmelon, Watermelon)	4 to 32 fl. oz.	Broadcast spray applications: To promote early female vigor and enhance early yields, apply at the 3 to 6 leaf stage and continue at weekly to 14 day intervals for four applications. To promote sugar development during cool growing conditions and enhance size of melons apply, Cytokin® Bioregulator Concentrate beginning at bloom and continue at weekly to 14 day intervals until 3 weeks before final harvest. Begin banded rates at the 3 to 6 leaf stage at the 4 fl. oz. rate for the first application. To enhance sugar accumulation, spray up to 16 fl. oz./acre at 2 to 10 days before harvest.

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Nut crops Almonds, Pecans, Walnuts, Pistachios, Filberts, Cashews	8 to 32 fl. oz.	Apply Cytokin® Bioregulator Concentrate with 10 lb./acre low-biuret urea at mid-nut fill and again one month later. Add 8 oz. of this product per acre to each zinc or calcium spray. Apply 16 to 32 oz. of Cytokin® Bioregulator Concentrate per acre prior to flowering. Ask your local PCA for specific regional timing.
Onions	8 fl. oz.	Spray fall seeded onions in spring at bulb initiation and at weekly to 2 week intervals for 3 to 4 applications. Transplants: see transplant instructions. Spray transplants at bulb initiation (2 to 4 new blades) and again weekly for up to 4 applications.
Peanuts	8 fl. oz.	Apply at the 3rd trifoliate. Repeat at 10 day intervals for four applications.
Potatoes	Seed Treatment	Dip potato pieces in a solution of 1 part Cytokin® Bioregulator Concentrate to 400 parts water for 20 to 60 seconds. This product can be used with a fungicide treatment. Follow with foliar spray program.
Potatoes (Foliar)	8 fl. oz.	Spray at tuber initiation (about 3-4 weeks after emergence) and again two weeks later.
Rice	8 fl. oz.	Spray at the 3 to 7 leaf stage to increase tillers and panicles or at the PI/PD stage to reduce straight heads and increase panicle size.
Sorghum (Milo)	8 fl. oz.	Apply single spray at the 4 to 7 leaf stage.
Soybeans	8 fl. oz.	Apply during the 3 to 5 trifoliate stage, and each of the R1 and R5 stages.
Spinach and leafy greens	8 fl. oz.	Make 4 to 6 applications at two week intervals beginning at the 3 leaf stage. Applications can be divided to provide weekly application of 4 fl. oz./acre applied with other spray mixtures or insecticide or foliar nutrients.

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Squash	4 to 32 fl. oz.	Broadcast spray applications: To promote early Summer, Winter female vigor and enhance yields, apply at the 3 to 6 zucchini leaf stage and continue at weekly to 14 day intervals until 2 weeks before final harvest. Begin banded applications at the 3 to 6 leaf stage at the 4 fl. oz. rate for the first application.
Strawberries	8 to 16 fl. oz.	Transplants: See transplant instructions. Begin spray applications at 1 to 2 weeks after transplanting and continue at 7 to 14 day intervals through the production season.
Beets, Sugar	8 to 16 fl. oz. 16 fl. oz. 16 fl. oz.	First application: Apply at the beginning of root enlargement. Second: Apply at beginning of sugar accumulation Final: Apply 4 to 6 weeks before harvest
Sugarcane	16 fl. oz. 32 fl. oz.	First: At beginning of ratoon bud extension. Second: One month after ratoon growth begins. Final: 4 to 6 weeks before harvest.
Tomatoes Fresh Market, Okra	8 fl. oz.	Spray Cytokin® Bioregulator Concentrate at the 6 to 8 leaf stage. Follow with 7 to 14 day applications to promote set and continue production. Make final application about 3 to 4 weeks before final harvest.
Tomatoes (processing)	8 fl. oz.	Apply Cytokin® Bioregulator Concentrate at the beginning of bloom. Make subsequent applications at 2 to 4 week intervals until 3-4 weeks before harvest.
Spring wheat, Barley, Rye and Oats	8 fl. oz.	Apply when plants have 3 to 5 true leaves emerged.
Winter Wheat, Barley and Rye	8 fl. oz.	Spray in the spring after the plants break dormancy but before jointing.
Yams Sweet potatoes	8 to 16 fl. oz.	Dip transplants in a solution of one part Cytokin® Bioregulator Concentrate to 4 parts water. Spray foliage at 2 and 4 weeks after transplanting.
All other crops	8 to 32 fl. oz.	Contact your local PCA or Distributor representative for specific crop uses.

ALL Fruits: Apple, Cherry, Citrus (Orange, Lemon, etc.), Banana, Stone fruit (Peach, Plum, etc.), Pear, Mango, Papaya, Pineapple

Transplants: Follow general transplant instructions.

Fruit trees in production: Spray fruit trees with a solution of 1 fl. oz. Cytokin® Bioregulator Concentrate in 4 gallons of water (or 1 to 2 pints this product/acre) at the following growth stages:

1. At bud break to increase pollination efficiency. (This product will not harm bees or pollinating insects);
2. At 1 week after petal fall to promote cell division;
3. At 1 to 2 weeks before fruit drop to reduce physiological stress and reduce fruit drop;
4. At 20 to 30 days after petal fall to increase fruit size.
5. Monthly during fruit growth and development to promote nutrient translocation to produce larger and better quality fruit.

Apply Cytokin® Bioregulator Concentrate with foliar nutrients, micronutrients or secondary nutrient sprays such as calcium, iron, and zinc.

Non-Bearing Use for TREES, FRUITS, NUTS, BERRIES, SHRUBS AND WOODY ORNAMENTALS:

To aid in propagation of trees, fruits, berries, soft wood cuttings, shrubs and woody ornamentals and to reduce transplant shock, to promote growth and vigor and reduce stress in non-bearing fruit trees such as apple, peach; berry and vine crops such as cranberries; evergreen trees such as spruce, fir, pine; deciduous trees such as birch, elm, maple; flowering plants and shrubs such as poinsettia, rose, azalea, rhododendron, crepe myrtle; and for other flowering and non-flowering shrubs.

New cuttings: Spray Cytokin® Bioregulator Concentrate at 1 to 2 pints per acre on the stems, branches, vines or canes to be propagated from 1 to 7 days before cutting. After planting, spray this product at ½ to 1 pint or apply though the irrigation system at weekly intervals until the plants are established.

Replant areas: Spray the plants before cutting. Then spray Cytokin® Bioregulator Concentrate weekly at ½ to 1 fluid ounce per 1500 square feet and irrigate in. Continue weekly to biweekly applications until plants are established.

Established Trees and Shrubs: Spray 1 to 2 pint Cytokin® Bioregulator Concentrate per acre, or a mixture of 1 fl. oz. of this product to 4 gallons water to thoroughly wet the foliage at any or all of the following growth stages:

1. Early spring to promote bud initiation;
2. At bud break;
3. At terminal calyx;
4. Early to mid-fall.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage

Pesticide Storage: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of reach of children, preferably in locked storage area.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILTY

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials, resistant strains or other influencing factors in the use of the product, which are beyond the control of MILLER CHEMICAL & FERTILIZER, LLC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold MILLER CHEMICAL & FERTILIZER, LLC and Seller harmless for any claims relating to such factors.

MILLER CHEMICAL & FERTILIZER, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or MILLER CHEMICAL & FERTILIZER, LLC and Buyer and User assume the risk of any such use. MILLER CHEMICAL & FERTILIZER, LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall MILLER CHEMICAL & FERTILIZER, LLC or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF MILLER CHEMICAL & FERTILIZER, LLC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY

OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF MILLER CHEMICAL & FERTILIZER, LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

MILLER CHEMICAL & FERTILIZER, LLC and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by a duly authorized representative of MILLER CHEMICAL & FERTILIZER, LLC.

Sol-U-Gro®, Nutrileaf and Nutrient Express are registered trademarks of Miller Chemical & Fertilizer, LLC.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION,

Date: Aug. 10, 2015

MEMORANDUM

SUBJECT: Science review of product chemistry in support of registration of end use product, Cytokin Bioregulator Concentrate, containing 0.01 % w/w of active ingredient Cytokinins as kinetin.

Decision Number:	505226
DP Number:	428443
EPA File Symbol Number:	90930-G
Chemical Class:	Biochemical
PC Code:	116801
CAS Number:	525-79-1
Active Ingredients:	Cytokinins as kinetin respectively
Tolerance Exemptions:	180.1157
MRID Numbers:	496347-01

FROM:
Clara Fuentes, Ph.D.
Entomologist
Biochemical Pesticides Branch
Biopesticides & Pollution Prevention Division (7511P)

THROUGH:
Margarita Collantes, Biologist, M.S.
Biochemical Pesticides Branch
Biopesticides & Pollution Prevention Division (7511P)

TO:
Gina Burnett, Regulatory Action Leader
Biochemical Pesticides Branch
Biopesticides & Pollution Prevention Division (7511P)

ACTION REQUESTED

Miller Chemical & Fertilizer, LLC, is seeking registration of a new end use product, Cytokin Bioregulator Concentrate, substantially similar to registered product, EPA Reg. No. 58199-1. This action is a PRIA category B660 ("me-too") registration. In support of this action the registrant has submitted product chemistry in MRID 496347-01, and mammalian toxicity data of TGAI in cited MRIDs 433724-01 to -04; 454533-03 and 454533-06. In addition, copies of proposed product label and copies of signed CSF, dated May 12, 2015, are submitted for review.

BACKGROUND INFORMATION

Cytokin Bioregulator Concentrate is a plant growth regulator (PGR), containing the plant hormone cytokinin to improve nutrient utilization, promote bud initiation and development, enhance flowering and increase fruit size. The product is similar in use and composition to EPA registered product, Cytokin Bioregulator Concentrate, EPA Reg. No. 58199-1.

As indicated on label directions for use, the product is to be applied as spray at a rate of 1 oz. with 4 gallons of water for general use, including transplants, or half to 1 pint per acre every 2 to 4 weeks after transplanting. For large area applications where aircraft or power driven sprayers are used, it should be applied with 3 to 10 gallons of water per acre or 10 to 100 gallons of water per acre, respectively. For chemigation applications, 1 part of product should be diluted in 5 parts water. Rates of application range from 2 to 4 fl. oz. to 32 fl. oz. per Acre, depending on the type of crop.

RECOMMENDATIONS AND CONCLUSIONS

Product chemistry: Acceptable.

MRID 496347-01: Acceptable. The study report includes an amendment to pages 21 to 24, addressing deficiencies concerning Physical Chemical Properties (OCSPP 830.6302 – 830.7950). Those deficiencies have been resolved satisfactorily (See Table 1 for Physical Chemical Properties of Cytokin Bioregulator Concentrate (EPA Reg No. 90930-G). Refer to Confidential Appendix for product composition and manufacturing process.

Mammalian toxicity: Acceptable. Toxicological classification of EP is based on cited data submitted for toxicological classification of Cytokinins (TGAI) (See Table 2 Toxicological Profile of Cytokin Bioregulator Concentrate (EPA Reg No. 90930-G) (based on the toxiclogical profile of its active ingredient (TGAI).

Non-target Organisms: N/A. The active ingredient in the product is from an EPA registered source, and the product is substantially similar to currently registered product EPA Reg. No. 90930-1.

Product performance: N/A. Review of efficacy data is not required unless the product is to be used against pests of human health significance. The active ingredient in the product is PGR for agricultural use to enhance plant production.

STUDY SUMMARY

Product chemistry:

TABLE 1. Physical and Chemical Properties of Cytokin Bioregulator Concentrate (EPA Reg No. 90930-G)

Guideline Reference No. / Property	Description of Result	Methods (cited MRIDs)
830.6302 / Color	Dark brown	Visual observation at room temperature
830.6303 / Physical State	Liquid	Visual observation at room temperature
830.6304/ Odor	Marine-like odor	Olfactory observation
830.6313 / Stability to normal and elevated temperatures, metals and metal ions.	Stable at ambient temperature. Product not expected to come in contact with metals and metal ions during storage.	N/A
830.6315 / Flammability	EP not flammable; it is in aqueous solution	N/A
830.6317 / Storage Stability	Will be submitted upon completion	
830.6319 / Miscibility	N/A Not emulsifiable liquid to be diluted with petroleum solvent.	N/A
830.6320 / Corrosion Characteristics	Will be submitted upon completion	493492-02
830.7000 / pH	4.5 to 5.5	pH meter
830.7050 / UV/Visible light absorption	N/A for EP	N/A
830.7100 / Viscosity	< 20 cps	Brookfield synchrolectric RVF Viscometer

TABLE 1. Physical and Chemical Properties of Cytokin Bioregulator Concentrate (EPA Reg No. 90930-G)		
Guideline Reference No. / Property	**Description of Result**	**Methods (cited MRIDs)**
830.7200 / Melting point	N/A for EP	N/A
830.7220 / Boiling point	N/A for EP	N/A
830.7300 / Density/Relative Density/Bulk Density	Density 8.7 – 8.9 lbs/ gal Specific gravity 1.04 – 1.07 @ 25 °C (77 °F)	MSDS for Dermosoft® Octiol Of Weight / gal density cup
830. 7520 / Particle size, Fiber length, and Diameter distribution	N/A for EP	N/A
830.7550/7560/7570 / Partition Coefficient (n-Octanol/water)	N/A for EP	N/A
830.7840 / Water solubility	N/A for EP	N/A
830.7950 / Vapor pressure	N/A for EP	N/A

Data from MRID 496347-01

Mammalian toxicity:

TABLE 2. Toxicological Profile of Cytokin Bioregulator Concentrate (EPA Reg No. 90930-G) (* based on the toxicological profile of its a.i. TGAI).			
Study Type/OCSPP Guideline	**LD_{50}/LC_{50}/Results**	**Toxicity Category**	**Cited MRIDs**
Acute Oral Toxicity/OCSPP 870.1100	> 5,000 mg/kg	IV	433724-01*
Acute Dermal Toxicity/OCSPP 870.1200	> 2,000 mg/kg	III	433724-02 *
Acute Inhalation Toxicity/OCSPP 870.1300	> 2.09 mg/L	IV	454533-03 *
Acute Eye Irritation/OCSPP 870.2400	Moderate Irritation	III	433724-03 *

TABLE 2. Toxicological Profile of Cytokin Bioregulator Concentrate (EPA Reg No. 90930-G) (* based on the toxicological profile of its a.i. TGAI).			
Study Type/OCSPP Guideline	**LD_{50}/LC_{50}/Results**	**Toxicity Category**	**Cited MRIDs**
Acute Dermal Irritation/OPPCS 870.2500	Slight irritant	IV	433724-04 *
Skin Sensitization/OPPCS 870.2600	Not a dermal sensitizer		454533-06 *
Hypersensitivity incidents (non-guideline)	None reported		

* Toxicological classification of EP is based on toxicological profile of Cytokinins (TGAI).

cc: Clara Fuentes; *Gina Burnett;* BPPD Chron File, IHAD/ARS, FT, PY-S: *8/10/2015.*

Manufacturing process information may be entitled to confidential treatment

CONFIDENTIAL APPENDIX

1), Analysis of Cytokinin-like activity by Radish Cotyledon Bioassay. Certified limits are determined consistent with EPA recommended standards.

Please use this template below when detailing deficiencies (or similarity issue for similarity screen) found in the technical screen. This is to be included in the checklist

EPA File symbol: 90930-G

This table shows deficiencies noted during the Technical Screen. The table is being revised on Aug. 4, 2015, to reflect resolution of those deficiencies. All deficiencies are resolved satisfactorily.

Similarity Issue or Deficiency	Data/Information Submitted	Reason for Inadequacies	What Data/Information has been submitted to resolve these deficiencies
	MRID 496347-01	Storage stability and Corrosion characteristics were waived in past registrations of similar products however, those data are required. Description of methods for determination of Physical / Chemical Characteristics were not included.	The registrant has submitted the methods employed for determination of the following physical/chemical characteristics: Description of methods for OCSPP 830.6302 determination of color; 830.6303 physical state; 830.6304 odor; 830.7000 pH; 830.7100 viscosity; 830.7300 density and relative gravity Data on OCSPP 830.6317 Storage Stability, and OCSPP 830.6320 Corrosion Characteristics will be submitted upon completion of the test..
Label	These new application sites and uses are added on the label: Grapes (Table and Wine), turf, replant areas, and hydroponic uses are added proposed label.	Proposed label must be identical to registered product. EPA Reg. No. 58199-1	Label has been amended and new application sites and uses have been removed from the proposed label to include only sites and uses approved for EPA Reg. No. 58199-1.

Burnett, Gina

From: Srinivas Mandava, M.D. <Srini@mandava.com>
Sent: Wednesday, July 29, 2015 3:29 PM
To: Burnett, Gina
Cc: Bhushan Mandava
Subject: RE: 90930-G Conference Call - July 20, 2015
Attachments: Miller Cytokin Bioregulator Concentrate - PRODUCT CHEMISTRY DATA _Non- Confidential - pages 21-24 (clean copy).pdf; Miller Cytokin Bioregulator Concentrate - PRODUCT CHEMISTRY DATA _Non- Confidential - pages 21-24 (highlighted).pdf; Miller Cytokin Bioregulator Concentrate Label updated (7-28-15).pdf

Importance: High

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Gina:

Please find enclosed the amended pages for Miller Chemical & Fertilizer, LLC's Cytokin Bioregulator Concentrate (EPA Reg. No. 90930-G) Product Chemistry volume (MRID 496347-01) addressing the deficiencies in the Physical/Chemical Properties section. The corrections were made based on our conference call On July 20, 2015.

We are providing a clean copy and a highlighted copy of the changes made in the Physical/Chemical Properties section (pages 21- 24).

We would appreciate it very much if you would be able to replace the original pages 21-24 with the amended pages 21-24 in the Product Chemistry volume (MRID 496347-01).

In addition we are submitting the updated product label to match the label of Cytokin Bioregulator Concentrate (EPA Reg. No. 58199-1).

Thank you for your assistance in this matter and kindly acknowledge the receipt of the above mentioned materials to address the deficiencies.

Regards,

Srini

Srinivas Mandava, M.D.
Mandava Associates, LLC
1050 Connecticut Avenue, N.W.
Suite 1000
Washington, D.C. 20036
Tel: (202) 223 - 1424
Fax: (202) 223 – 0141

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****
****
*

From: Burnett, Gina [mailto:Burnett.Gina@epa.gov]
Sent: Tuesday, July 21, 2015 10:00 PM
To: Srinivas Mandava, M.D.
Cc: Naga B Mandava
Subject: RE: 90930-G Conference Call - July 20, 2015

Thank you, Srini. We look forward to your re-submission.

Let me know if you have any further questions.

Gina

From: Srinivas Mandava, M.D. [mailto:Srini@mandava.com]
Sent: Tuesday, July 21, 2015 9:51 PM
To: Burnett, Gina
Cc: Naga B Mandava
Subject: RE: 90930-G Conference Call - July 20, 2015

Dear Gina:

Thank you very much for your assistance for arranging the conference call with Clara yesterday, and for your follow email regarding the deficiencies for the above mentioned product.

We will provide you with an updated physical/chemical properties section as amended pages to the non - confidential appendix portion of the Product Chemistry volume (MRID 496347-01) addressing each of the mentioned items.

We will also update the label to match the currently registered label for 58199-1.

All of the required information will be submitted to the Agency prior to the July 30, 2015 deadline.

Again thank you very much for your assistance in these matters.

Best Regards,

Srini

Srinivas Mandava, M.D.
Mandava Associates, LLC
1050 Connecticut Avenue, N.W.
Suite 1000
Washington, D.C. 20036
Tel: (202) 223 - 1424
Fax: (202) 223 – 0141

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dissemination, distribution, or copying of this communication is strictly prohibited. Please reply to the sender that you have received the message in error and then delete it. Thank you.
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*

From: Burnett, Gina [mailto:Burnett.Gina@epa.gov]
Sent: Tuesday, July 21, 2015 11:28 AM
To: Srinivas Mandava, M.D.
Cc: Naga B Mandava
Subject: RE: 90930-G Conference Call - July 20, 2015

Dr. Mandava,

We have revisited the 40 CFR citations for Preliminary Analysis and Enforcement Analytical Method and determined that these data requirements are actually not required for your product. Please see our comments, in red, in the attached file.

Please let me know if you have any questions. We look forward to your resubmission by July 30, 2015.

Best Regards,
Gina

Gina M. Burnett, M.S.
Biochemical Pesticides Branch (BPB)
Biopesticides and Pollution Prevention Division (BPPD)
Office of Pesticide Programs
U.S. Environmental Protection Agency
burnett.gina@epa.gov
(703) 605-0513 (phone)
(703) 305-0118 (fax)
http://www.epa.gov/pesticides/

From: Burnett, Gina
Sent: Friday, July 17, 2015 11:03 AM
To: Srinivas Mandava, M.D.
Subject: 90930-G Conference Call - July 20, 2015

Dr. Mandava,

The call-in number for the 11am meeting on July 20, 2015:

Call: 1-866-299-3188
Passcode: [redacted]

Clara Fuentes will be on the line with us to discuss any questions you have.

Best Regards,
Gina

Internal Agency code

Gina M. Burnett, M.S.
Biochemical Pesticides Branch (BPB)
Biopesticides and Pollution Prevention Division (BPPD)
Office of Pesticide Programs
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(703) 305-0118 (fax)
http://www.epa.gov/pesticides/

CYTOKIN® BIOREGULATOR CONCENTRATE

ACTIVE INGREDIENTS:

Cytokinin, as kinetin, based on biological activity.....0.01%

Includes:

6-(4-hydroxy-3-methylbut-*trans*-2-enylamino)-purine
N^6-methylaminopurine,
N^6-dimethylaminopurine,
N^6-isopentenylaminopurine

INERT INGREDIENTS.....**99.99%**

TOTAL.....100.00%

CAUTION

KEEP OUT OF REACH OF CHILDREN

Si usted no entiende la etiqueta, busque a alguien pare que se la explique a usted en detalle.
(if you do not understand the label, find someone to explain it to you in detail)

FIRST AID	
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If Inhaled	• Move person to fresh air. • If person not breathing, call 911 or an ambulance then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call poison control center or doctor for further treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call poison control center or doctor for treatment advice.
Have a product container or label with you when calling a poison control center or doctor, or going for treatment. You may also call 1-800-222-1212 for emergency medical treatment information.	

For chemical emergency: spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300

Manufactured for:
Miller Chemical & Fertilizer, LLC
P.O. Box 333, 120 Radio Road
Hanover, PA 17331

NET CONTENTS:

EPA Reg. No. 90930- EPA Est. No.

Batch Code:_____

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear long-sleeved shirt and long pants and shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining personal protective equipment. If no such instructions for washables, use detergent and hot water. Keep and wash personal protective equipment separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR part 170.240(d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not contaminate water when disposing of equipment washwater or rinsate.

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Before using Cytokin® Bioregulator Concentrate, read and follow the precautions appearing on the label.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State of Tribal agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170.

This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), notification to workers and restricted-entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, waterproof gloves and shoes plus socks.

NON-AGRICULTURE USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Reentry Statement: Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treated area until spray has dried.

Chemigation system

Apply Cytokin® Bioregulator Concentrate only through the following types of systems: sprinkler, including center pivot, lateral move, end tow, side roll, traveler, big gun, solid set, or hand move; or drip (trickle) irrigation systems. Do not apply this product through any other type of system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable about the chemigation systems and responsible for its operation, or under supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone (RPZ), back flow preventer or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the

public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid- operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Sprinkler Chemigation: The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

The pesticide injection system must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when speeds favor drift beyond area intended for treatment.

Supply pesticide tank agitation, especially if product is to sit in tank for over 6 hours.

Apply Cytokin® Bioregulator Concentrate continuously for the duration of water application or with

the first quarter to one-half of the watering period.

Mixing instructions: Fill supply tank to 1/4 to 1/2 full. Add Cytokin® Bioregulator Concentrate and complete filling.

Cytokin® Bioregulator Concentrate
General Information

Cytokin® Bioregulator Concentrate is a plant growth regulator product containing cytokinin plant hormone formulated to improve nutrient utilization, promote bud initiation and development, flower set and retention, improve fruit size, and increase efficiency of production.

Use Cytokin® Bioregulator Concentrate in combination with a well-balanced fertility program and good management practices. The Company recommends the use of soil and tissue testing, and additional nutrients and micronutrients as needed. For maximum benefit, add 0.1 to 0.25 lbs. Calcium to spray solution with a complete fertilizer, such as Nutrileaf (20-20-20) or Sol-U-Gro® (12-48-8) along with chelated micronutrients.

APPLICATION INSTRUCTIONS

SHAKE WELL BEFORE USING

Good growing conditions are necessary for the maximum utilization of Cytokin® Bioregulator Concentrate. For maximum gain from the application of Cytokin® Bioregulator Concentrate always use a well-balanced plant nutrient program. This product, in any of its applications, is not intended to replace fertilizer or to supply nutrients that would normally be added in a conventional fertility program. Timing of the foliar spray application is very important. Always follow directions precisely. Do not apply when temperatures are above 95°F (36°C) or within eight hours of forecast rain.

For General Use, mix 1 oz. Cytokin® Bioregulator Concentrate with 4 gallons water and spray plant foliage to dampness, almost to runoff. Apply this product in the morning or late afternoon.

For larger areas where aircraft or power driven sprayers are used to apply the spray, follow the specific use rates below. Apply with sufficient water to get thorough foliage coverage, 3 to 10 gallons water per acre for aircraft sprayers and 10 to 100 gallons water per acre for ground driven spray equipment. It is acceptable to use Cytokin® Bioregulator Concentrate with a surfactant. This product can be applied as a mixture with most pesticides. Always run a "jar compatibility test" and treat a small area with any new mixture to test the chemical and crop reaction before large field application.

For transplanting: Drench soil around each plant with a mixture of 1 fl. oz. Cytokin® Bioregulator Concentrate in 4 gallons of water or transplant solution. Spray seedlings with a solution of 1 fl. oz. Cytokin® Bioregulator Concentrate in 4 gallons of water or ½ to one pint per acre 2 to 4 weeks after transplanting and follow with subsequent sprays at instructed intervals throughout the growing season.

Chemigation application: Dilute 1 part Cytokin® Bioregulator Concentrate with at least 5 parts water before adding to the supply tank. Ensure continuous agitation of supply tank during application or injection into the chemigation system. When applying Cytokin® Bioregulator Concentrate through a drip system, apply Cytokin® Bioregulator Concentrate with the first ¼ inch equivalent water. In sprinkler systems, apply this product over the watering cycle.

CROP USE GUIDELINES

For local use recommendations for major and minor crops, contact your PCA or local distributor representative.

Include Calcium EDTA or other highly available calcium source in the tank mix of all foliar applications.

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Asparagus	16 fl. oz.	Spray Cytokin® Bioregulator Concentrate to fern about 2 weeks after last harvest and repeat monthly during fern growth.
Beans – fresh: Edible, green, etc. And peas	8 fl. oz.	First: apply at the 2 to 3 trifoliate leaf stage. Second: 7 to 15 days later.
Beans and peas – dry	8 fl. oz.	Apply when plants have developed 3 to 7 trifoliate leaves, again at early bloom, and again at the beginning of pod fill.
Bell Peppers Chile Peppers Eggplant	8 fl. oz.	Apply at the 6 to 8 leaf stage. Follow with applications at 7 to 14 day intervals for a total of four to six applications.
Broccoli, Cabbage, Cauliflower, Celery, Lettuce	8 fl. oz.	Make 4 to 6 applications at two week intervals beginning at the 3 leaf stage. Applications can be divided to provide weekly applications of 2 to 4 fl. oz./acre applied with other spray or mixtures of insecticides or foliar nutrients.
Carrot and Other root crops	16 fl. oz.	Apply when seedlings have 3 to 6 leaves.
Corn (field)	8 fl. oz.	Apply to prolific (multiple ear) varieties only. Make first application at the 8 to 10 leaf stage. Follow with second application at tasseling.
Corn (sweet and popcorn)	8 fl. oz.	Apply at the 5 to 7 leaf stage. Follow with second application at tasseling.
Cotton	2 to 4 fl. oz. OR 8 fl. oz.	Pinhead square: Apply weekly for 4 weeks. Adjust for band width; OR First Bloom: Apply at first white flower and again two weeks later (mid bloom)
Cotton (stripper)	8 fl. oz.	Make single application during first 2 to 3 weeks of bloom

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Cucumber	4 to 32 fl. oz.	Broadcast spray application: To promote early female vigor and enhance yields, apply at the 3 to 6 leaf stage and continue at weekly to 14 day intervals for four applications. Begin banded rates at the 3 to 6 leaf stage at the rate of 4 to 6 fl. oz. for the first application.
Forage crops - legumes or grasses	8 to 16 fl. oz.	Spray Cytokin® Bioregulator Concentrate 4 to 6 weeks after emergence and monthly thereafter. Mature Crop: Spray this product as spring growth begins, 1 week before harvest and again 2 weeks after cutting.
Seed Production	8 to 16 fl. oz.	On established crops: spray Cytokin® Bioregulator Concentrate beginning of inflorescence development (early tillering) and again 2 weeks later. Spray 8 to 16 fl. oz./acre at the beginning of bloom.
Grapes	4 to 16 fl. oz.	General: Cytokin® Bioregulator Concentrate at 4 fl. oz. with foliar nutritional or pesticidal sprays. Sizing: Apply as a tank mix with all Gibberellic Acid sizing sprays. Harvest: Apply this product with high potash fertilizer at 2 to 12 days before harvest to enhance sugar accumulation.
Melons (Cantaloupe, Muskmelon, Watermelon)	4 to 32 fl. oz.	Broadcast spray applications: To promote early female vigor and enhance early yields, apply at the 3 to 6 leaf stage and continue at weekly to 14 day intervals for four applications. To promote sugar development during cool growing conditions and enhance size of melons apply, Cytokin® Bioregulator Concentrate beginning at bloom and continue at weekly to 14 day intervals until 3 weeks before final harvest. Begin banded rates at the 3 to 6 leaf stage at the 4 fl. oz. rate for the first application. To enhance sugar accumulation, spray up to 16 fl. oz./acre at 2 to 10 days before harvest.

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Nut crops Almonds, Pecans, Walnuts, Pistachios, Filberts, Cashews	8 to 32 fl. oz.	Apply Cytokin® Bioregulator Concentrate with 10 lb./acre low-biuret urea at mid-nut fill and again one month later. Add 8 oz. of this product per acre to each zinc or calcium spray. Apply 16 to 32 oz. of Cytokin® Bioregulator Concentrate per acre prior to flowering. Ask your local PCA for specific regional timing.
Onions	8 fl. oz.	Spray fall seeded onions in spring at bulb initiation and at weekly to 2 week intervals for 3 to 4 applications. Transplants: see transplant instructions. Spray transplants at bulb initiation (2 to 4 new blades) and again weekly for up to 4 applications.
Peanuts	8 fl. oz.	Apply at the 3rd trifoliate. Repeat at 10 day intervals for four applications.
Potatoes	Seed Treatment	Dip potato pieces in a solution of 1 part Cytokin® Bioregulator Concentrate to 400 parts water for 20 to 60 seconds. This product can be used with a fungicide treatment. Follow with foliar spray program.
Potatoes (Foliar)	8 fl. oz.	Spray at tuber initiation (about 3-4 weeks after emergence) and again two weeks later.
Rice	8 fl. oz.	Spray at the 3 to 7 leaf stage to increase tillers and panicles or at the PI/PD stage to reduce straight heads and increase panicle size.
Sorghum (Milo)	8 fl. oz.	Apply single spray at the 4 to 7 leaf stage.
Soybeans	8 fl. oz.	Apply during the 3 to 5 trifoliate stage, and each of the R1 and R5 stages.
Spinach and leafy greens	8 fl. oz.	Make 4 to 6 applications at two week intervals beginning at the 3 leaf stage. Applications can be divided to provide weekly application of 4 fl. oz./acre applied with other spray mixtures or insecticide or foliar nutrients.

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Squash	4 to 32 fl. oz.	Broadcast spray applications: To promote early Summer, Winter female vigor and enhance yields, apply at the 3 to 6 zucchini leaf stage and continue at weekly to 14 day intervals until 2 weeks before final harvest. Begin banded applications at the 3 to 6 leaf stage at the 4 fl. oz. rate for the first application.
Strawberries	8 to 16 fl. oz.	Transplants: See transplant instructions. Begin spray applications at 1 to 2 weeks after transplanting and continue at 7 to 14 day intervals through the production season.
Beets, Sugar	8 to 16 fl. oz. 16 fl. oz. 16 fl. oz.	First application: Apply at the beginning of root enlargement. Second: Apply at beginning of sugar accumulation Final: Apply 4 to 6 weeks before harvest
Sugarcane	16 fl. oz. 32 fl. oz.	First: At beginning of ratoon bud extension. Second: One month after ratoon growth begins. Final: 4 to 6 weeks before harvest.
Tomatoes Fresh Market, Okra	8 fl. oz.	Spray Cytokin® Bioregulator Concentrate at the 6 to 8 leaf stage. Follow with 7 to 14 day applications to promote set and continue production. Make final application about 3 to 4 weeks before final harvest.
Tomatoes (processing)	8 fl. oz.	Apply Cytokin® Bioregulator Concentrate at the beginning of bloom. Make subsequent applications at 2 to 4 week intervals until 3-4 weeks before harvest.
Spring wheat, Barley, Rye and Oats	8 fl. oz.	Apply when plants have 3 to 5 true leaves emerged.
Winter Wheat, Barley and Rye	8 fl. oz.	Spray in the spring after the plants break dormancy but before jointing.
Yams Sweet potatoes	8 to 16 fl. oz.	Dip transplants in a solution of one part Cytokin® Bioregulator Concentrate to 4 parts water. Spray foliage at 2 and 4 weeks after transplanting.
All other crops	8 to 32 fl. oz.	Contact your local PCA or Distributor representative for specific crop uses.

ALL Fruits: Apple, Cherry, Citrus (Orange, Lemon, etc.), Banana, Stone fruit (Peach, Plum, etc.), Pear, Mango, Papaya, Pineapple

Transplants: Follow general transplant instructions.

Fruit trees in production: Spray fruit trees with a solution of 1 fl. oz. Cytokin® Bioregulator Concentrate in 4 gallons of water (or 1 to 2 pints this product/acre) at the following growth stages:

1. At bud break to increase pollination efficiency. (This product will not harm bees or pollinating insects);
2. At 1 week after petal fall to promote cell division;
3. At 1 to 2 weeks before fruit drop to reduce physiological stress and reduce fruit drop;
4. At 20 to 30 days after petal fall to increase fruit size.
5. Monthly during fruit growth and development to promote nutrient translocation to produce larger and better quality fruit.

Apply Cytokin® Bioregulator Concentrate with foliar nutrients, micronutrients or secondary nutrient sprays such as calcium, iron, and zinc.

Non-Bearing Use for TREES, FRUITS, NUTS, BERRIES, SHRUBS AND WOODY ORNAMENTALS:

To aid in propagation of trees, fruits, berries, soft wood cuttings, shrubs and woody ornamentals and to reduce transplant shock, to promote growth and vigor and reduce stress in non-bearing fruit trees such as apple, peach; berry and vine crops such as cranberries; evergreen trees such as spruce, fir, pine; deciduous trees such as birch, elm, maple; flowering plants and shrubs such as poinsettia, rose, azalea, rhododendron, crepe myrtle; and for other flowering and non-flowering shrubs.

New cuttings: Spray Cytokin® Bioregulator Concentrate at 1 to 2 pints per acre on the stems, branches, vines or canes to be propagated from 1 to 7 days before cutting. After planting, spray this product at ½ to 1 pint or apply though the irrigation system at weekly intervals until the plants are established.

Replant areas: Spray the plants before cutting. Then spray Cytokin® Bioregulator Concentrate weekly at ½ to 1 fluid ounce per 1500 square feet and irrigate in. Continue weekly to biweekly applications until plants are established.

Established Trees and Shrubs: Spray 1 to 2 pint Cytokin® Bioregulator Concentrate per acre, or a mixture of 1 fl. oz. of this product to 4 gallons water to thoroughly wet the foliage at any or all of the following growth stages:

1. Early spring to promote bud initiation;
2. At bud break;
3. At terminal calyx;
4. Early to mid-fall.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage

Pesticide Storage: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of reach of children, preferably in locked storage area.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILTY

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials, resistant strains or other influencing factors in the use of the product, which are beyond the control of MILLER CHEMICAL & FERTILIZER, LLC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold MILLER CHEMICAL & FERTILIZER, LLC and Seller harmless for any claims relating to such factors.

MILLER CHEMICAL & FERTILIZER, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or MILLER CHEMICAL & FERTILIZER, LLC and Buyer and User assume the risk of any such use. MILLER CHEMICAL & FERTILIZER, LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall MILLER CHEMICAL & FERTILIZER, LLC or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF MILLER CHEMICAL & FERTILIZER, LLC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY

OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF MILLER CHEMICAL & FERTILIZER, LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

MILLER CHEMICAL & FERTILIZER, LLC and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by a duly authorized representative of MILLER CHEMICAL & FERTILIZER, LLC.

Sol-U-Gro®, Nutrileaf and Nutrient Express are registered trademarks of Miller Chemical & Fertilizer, LLC.

AMENDED PAGES

PHYSICAL AND CHEMICAL PROPERTIES [OCSPP Guidelines 830.6302 - 830.7950]

Color [OCSPP Guideline 830.6302]

The color of the product is dark brown.

Method:
Color (Visual): Place material in a clear glass container to visually determine appropriate color.

Physical State [OCSPP Guideline 830.6303]

The product is a liquid.

Method:
Visual: Place material in a clear glass container to visually determine physical state (solid or liquid).

Odor [OCSPP Guideline 830.6304]

The product has a marine-like odor

Method:
Olfactory: Place material in an open, clear glass container. Waft theair over the container toward you while breathing normally. Determine the material's appropriate odor.

Stability [OCSPP Guideline 830.6313]

The formulation is stable at ambient temperature (25°C).

The stability test is not required for the subject product and only storage stability test (see below) is required for this product.

Oxidizing and Reducing Action [OCSPP Guideline 830.6314]

The end-use product does not contain any oxidizing or reducing agent.

[This guideline is applicable **only** if the product contains an oxidizing or reducing agent.]

The end-use product is not expected to come into direct contact with any metals and it is stored in plastic bottles.

The applicant requests waiver for this guideline data.

Flammability [OCSPP Guideline 830.6315]

The end-use product containing the active ingredient does not exhibit any flammability

AMENDED PAGES

characteristics and there are no flammable or combustible ingredients in the technical product.

The product is not flammable because it is in aqueous solution.

Explodability [OCSPP Guideline 830.6316]

This guideline is applicable **only** if the product is potentially explosive.

Since it is not applicable, the applicant requests waiver for explodability data.

Storage Stability [OCSPP Guideline 830.6317]

The registered (source) material, **Nitrozyme** (EPA Reg. No.: 45246-1) is stable for more than 1 year. This is because all EPA registered products are stable for 1 year.

Since the Cytokin® Bioregulator Concentrate is made up of Nitrozyme (which is stable for 1 year or more) and water, it is expected that the end-use product (Cytokin® Bioregulator Concentrate) is stable for more than 1 year.

The applicant will conduct 1 year storage stability study and submit the data within 18 months after granting of the conditional registration.

Miscibility [OCSPP Guideline 830.6319]

The end-use product is soluble in water.

Cytokin® Bioregulator Concentrate is formulated with water and is readily soluble in water. Therefore, Cytokin® Bioregulator Concentrate is miscible with water.

Corrosion Characteristics [OCSPP Guideline 830.6320]

The product is not corrosive.

There is no potential for exposure of the end-use product to metals. The product is stored in plastic containers. Therefore, the applicant requests waiver for data on corrosion characteristics.

The applicant will obtain information on corrosion characteristics from the same (storage stability) study.

Dielectric Breakdown Voltage [OCSPP Guideline 830.6321]

The end-use product is not intended for use around electrical equipment.

Dielectric breakdown voltage data is required **only** if the product is intended for use around electrical equipment.

AMENDED PAGES

The applicant requests waiver for data on dielectric breakdown voltage.

pH [OCSPP Guideline 830.7000]

The subject product has a pH 4.5 to 5.5.

Method:
Miller Chemical prefers the pH measurement be made by use of pH meter. pH meters come with the proper procedures that, when followed, conform to ASTM standards.

UV/Visible Spectrum [OCSPP Guideline 830.7050]

Ultraviolet and visible spectrum is required for active ingredient (TGAI). It is not required for an end-use product (Cytokin® Bioregulator Concentrate) derived from TGAI.

The applicant requests waiver for data on UV/visible spectral data for Cytokin® Bioregulator Concentrate.

Viscosity [OCSPP Guideline 830.7100]

Viscosity of the end-use product has a viscosity of less than 20 cps.

Method:
Miller Chemical prefers the viscosity measurement be made using a Brookfield synchrolectric RVF Viscometer. The method conforms to ASTM standards and was supplied with Miller Chemical laboratory's Brookfield RVF Viscometer.

Melting Point [OCSPP Guideline 830.7200]

The melting point/melting range for the subject product is not required because it is an end use product (Cytokin® Bioregulator Concentrate), which is a mixture of several ingredients present in aqueous solution.

Boiling Point [OCSPP Guideline 830.7220]

The boiling point for the subject product is not required because it is a mixture of several ingredients in aqueous solution.

This guideline reference number is not applicable for end-use product which is a mixture of several ingredients.

The applicant requests waiver for this guideline because of its inapplicability.

Density, Bulk Density, or Specific Gravity [OCSPP Guideline 830.7300]

The subject product's density is 8.7 – 8.9 lbs/gal and specific gravity is 1.04 – 1.07 @ 25°C (77°F).

AMENDED PAGES

Method:
Miller Chemical prefers the density measurement be made by use of a Standard Weight Per Gallon density cup conforming to ASTM tolerances. Approved density cups come with the proper procedures that, when followed, conform to ASTM standards.

Dissociation Constant [OCSPP Guideline 830.7370]

It is not applicable to end-use product.

Particle Size, Fiber Length, and Diameter Distribution [OCSPP 830.7520]

It is not applicable to end-use product because it is a liquid.

Octanol-Water Partition Coefficient [OCSPP Guideline 830.7550-830.7570]

The octanol-water partition coefficient data is applicable only to active ingredient.

It is not applicable to end-use product.

Solubility [OCSPP Guideline 830.7840]

The end-use product is readily soluble in water.

Vapor Pressure [OCSPP Guideline 830.7950]

The subject product's vapor pressure is not applicable because it is an end use product (Cytokin® Bioregulator Concentrate).

The applicant requests a waiver for this guideline.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

CERTIFIED MAIL

Dr. N. Bhushan Mandava
Miller Chemical & Fertilizer, LLC
c/o Mandava Associates, LLC
1050 Connecticut Ave, NW, Suite 1000
Washington, D.C. 20036

July 16, 2015

RE: Deficiencies and Issues Noted During Preliminary 45-Day Technical Screen
Product name: Cytokin Bioregulator Concentrate
Active Ingredients: Cytokinin (as kinetin)
EPA File Symbol: 90930-G
Decision Number: 505226
PRIA Category: B660

Dear Dr. Mandava:

The Agency has completed its preliminary technical screening of your application pursuant to Section 33(f)(4)(B)(i)(II) of the Federal Insecticide, Fungicide, and Rodenticide (FIFRA) Act, as amended by the Pesticide Registration Improvement Extension Act. The Agency has determined that your application has not passed the preliminary technical screen and therefore is subject to rejection if the application is not corrected. The deficiencies are outlined in the attached confidential appendix.

In order for the review of your product to continue, you will need to correct your application to address the item(s) listed above within 10 business days of the date you received this letter. Corrections must be received by EPA by the 10th business day. EPA recommends sending your complete set of corrections by email to the contact listed below to ensure they are timely received. If studies or confidential information are being submitted by mail, a complete courtesy copy received by email by the deadline will be considered timely. If you cannot correct the application, or do not respond within 10 business days, your application will be rejected. At this time you could also choose to withdraw your application.

The Agency wants to work with you to help move your application into the next phase of the regulatory process. As Gina Burnett, Regulatory Action Leader, Biochemical Pesticides Branch, discussed with you in a telephone conversation on July 16, 2015, we hope that the deficiencies can be addressed as outlined in the confidential appendix within the given timeframe. If you have additional questions or would like to arrange a meeting or teleconference, please contact Ms. Gina Burnett at burnett.gina@epa.gov, or via phone at (703) 605-0513.

Sincerely,

Linda A. Hollis, Chief
Biochemical Pesticides Branch
Biopesticides and Pollution Prevention Division
Office of Pesticide Programs

~~CONFIDENTIAL~~ APPENDIX

Deficiencies Noted During the Technical Screen:
EPA File symbol: 90930-G
Decision No.: 505226

This table has been revised to reflect the outcome of the teleconference between Mandava Associates (representing Miller Chemical & Fertilizer, LLC) and BPPD/OPP/EPA on July 20, 2015.

Similarity Issue or Deficiency	Data/Information Submitted		Information are Needed
Data Deficiency: OCSPP 830.6302 Color 830.6303 Physical State 830.6304 Odor 830.7000 pH 830.7100 Viscosity 830.7300 Density/relative density/bulk density	MRID 496347-01	These data requirements were not fully addressed.	You must submit description of the methods used for each study.
Data Deficiency: OCSPP 830.6317 Storage Stability OCSPP 830.6320 Corrosion Characteristics	MRID 496347-01	These data are CURRENTLY required for registration, even though they may have been waived in the past for similar products.	You must submit data or information to adequately fulfill the requirements of OCSPP 830.6317 Storage Stability and OCSPP 830.6320 Corrosion Characteristics. Verification of ongoing or soon to be initiated studies (to be completed post-registration) is acceptable.
~~**Data Deficiency:**~~ ~~OCSPP 830.1700 Preliminary Analysis~~ ~~OCSPP 830.1800 Enforcement Analytical Method.~~	~~MRID 496347-01~~	~~Data in MRID 496347-01 includes a bioassay consisting of product applications to radish cotyledons to demonstrate activity of the product. The Agency considers this to be product performance (efficacy) information and does not find it acceptable to fulfill OCSPP 830.1700 Preliminary Analysis and OCSPP 830.1800 Enforcement Analytical Method. The purpose of these data is to determine the concentration of active ingredient in the product, employing an analytical method suitable for enforcement purposes.~~	~~You must submit data or information to adequately fulfill the requirements of OCSPP 830.1700 Preliminary Analysis and OCSPP 830.1800 Enforcement Analytical Method.~~
Similar Issue: Labeling	Draft product label with use sites including: grapes (table and wine), turf, replant areas, and hydroponic uses.	The use sites - grapes (table and wine), turf, replant areas, and hydroponic uses do not appear on the label of the cited product, EPA Reg No. 58199-1. A product claiming to be substantially similar to a currently registered product, and coded as a B660 under PRIA 3, must bear the same use pattern as the currently registered product. Adding to or changing existing use patterns excludes the proposed product from treatment as a substantially similar product. Deleting use patterns is acceptable.	Your product label must be identical to the product label for EPA Reg No. 58199-1.

Agreed in meeting that Miller will describe the method used in one or two sentences, either visual observation, olfactory observation or instrument used.

Following the meeting, EPA determined that these data are not required per 40 CFR 158.2030 because the EP is produced via an integrated system.

Agreed in meeting that Miller will revise the label to include only 58199-1 use sites. After Amendments are made to the 58199-1 label, Miller may submit an application to amend the 90930-G label.

Agreed that Miller will revise their statement in MRID 496347-01 to clearly indicate that studies will be performed within 18 months of registration.

Burnett, Gina

From: Burnett, Gina
Sent: Tuesday, July 21, 2015 11:28 AM
To: 'Srinivas Mandava, M.D.'
Cc: 'Bhushan Mandava'
Subject: RE: 90930-G Conference Call - July 20, 2015
Attachments: 90930-G 10-day letter 20150720 CA tabled edited - password protected.pdf

Dr. Mandava,

We have revisited the 40 CFR citations for Preliminary Analysis and Enforcement Analytical Method and determined that these data requirements are actually not required for your product. Please see our comments, in red, in the attached file.

Please let me know if you have any questions. We look forward to your resubmission by July 30, 2015.

Best Regards,
Gina

Gina M. Burnett, M.S.
Biochemical Pesticides Branch (BPB)
Biopesticides and Pollution Prevention Division (BPPD)
Office of Pesticide Programs
U.S. Environmental Protection Agency
burnett.gina@epa.gov
(703) 605-0513 (phone)
(703) 305-0118 (fax)
http://www.epa.gov/pesticides/

From: Burnett, Gina
Sent: Friday, July 17, 2015 11:03 AM
To: Srinivas Mandava, M.D.
Subject: 90930-G Conference Call - July 20, 2015

Dr. Mandava,

The call-in number for the 11am meeting on July 20, 2015:

Call: 1-866-299-3188
Passcode: [redacted]

Clara Fuentes will be on the line with us to discuss any questions you have.

Best Regards,
Gina

Gina M. Burnett, M.S.

Internal Agency code

Biochemical Pesticides Branch (BPB)
Biopesticides and Pollution Prevention Division (BPPD)
Office of Pesticide Programs
U.S. Environmental Protection Agency
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(703) 605-0513 (phone)
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

CERTIFIED MAIL

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Dr. N. Bhushan Mandava
Miller Chemical & Fertilizer, LLC
c/o Mandava Associates, LLC
1050 Connecticut Ave, NW, Suite 1000
Washington, D.C. 20036

July 16, 2015

RE: Deficiencies and Issues Noted During Preliminary 45-Day Technical Screen
Product name: Cytokin Bioregulator Concentrate
Active Ingredients: Cytokinin (as kinetin)
EPA File Symbol: 90930-G
Decision Number: 505226
PRIA Category: B660

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The Agency has completed its preliminary technical screening of your application pursuant to Section 33(f)(4)(B)(i)(II) of the Federal Insecticide, Fungicide, and Rodenticide (FIFRA) Act, as amended by the Pesticide Registration Improvement Extension Act. The Agency has determined that your application has not passed the preliminary technical screen and therefore is subject to rejection if the application is not corrected. The deficiencies are outlined in the attached confidential appendix.

In order for the review of your product to continue, you will need to correct your application to address the item(s) listed above within 10 business days of the date you received this letter. Corrections must be received by EPA by the 10th business day. EPA recommends sending your complete set of corrections by email to the contact listed below to ensure they are timely received. If studies or confidential information are being submitted by mail, a complete courtesy copy received by email by the deadline will be considered timely. If you cannot correct the application, or do not respond within 10 business days, your application will be rejected. At this time you could also choose to withdraw your application.

The Agency wants to work with you to help move your application into the next phase of the regulatory process. As Gina Burnett, Regulatory Action Leader, Biochemical Pesticides Branch, discussed with you in a telephone conversation on July 16, 2015, we hope that the deficiencies can be addressed as outlined in the confidential appendix within the given timeframe. If you have additional questions or would like to arrange a meeting or teleconference, please contact Ms. Gina Burnett at burnett.gina@epa.gov, or via phone at (703) 605-0513.

Sincerely,

Linda A. Hollis, Chief
Biochemical Pesticides Branch
Biopesticides and Pollution Prevention Division
Office of Pesticide Programs

~~CONFIDENTIAL~~ APPENDIX

Deficiencies Noted During the Technical Screen:

EPA File symbol: 90930-G

Decision No.: 505226

Similarity Issue or Deficiency	Data/Information Submitted	Reason for Inadequacies	What Data/Information are Needed
Data Deficiency: OCSPP 830.6302 Color 830.6303 Physical State 830.6304 Odor 830.7000 pH 830.7100 Viscosity 830.7300 Density/relative density/bulk density	MRID 496347-01	These data requirements were not fully addressed.	You must submit description of the methods used for each study.
Data Deficiency: OCSPP 830.6317 Storage Stability OCSPP 830.6320 Corrosion Characteristics	MRID 496347-01	These data are CURRENTLY required for registration, even though they may have been waived in the past for similar products.	You must submit data or information to adequately fulfill the requirements of OCSPP 830.6317 Storage Stability and OCSPP 830.6320 Corrosion Characteristics. Verification of ongoing or soon to be initiated studies (to be completed post-registration) is acceptable.
Data Deficiency: OCSPP 830.1700 Preliminary Analysis OCSPP 830.1800 Enforcement Analytical Method.	MRID 496347-01	Data in MRID 496347-01 includes a bioassay consisting of product applications to radish cotyledons to demonstrate activity of the product. The Agency considers this to be product performance (efficacy) information and does not find it acceptable to fulfill OCSPP 830.1700 Preliminary Analysis and OCSPP 830.1800 Enforcement Analytical Method. The purpose of these data is to determine the concentration of active ingredient in the product, employing an analytical method suitable for enforcement purposes.	You must submit data or information to adequately fulfill the requirements of OCSPP 830.1700 Preliminary Analysis and OCSPP 830.1800 Enforcement Analytical Method.
Similar Issue: Labeling	Draft product label with use sites including: grapes (table and wine), turf, replant areas, and hydroponic uses.	The use sites - grapes (table and wine), turf, replant areas, and hydroponic uses do not appear on the label of the cited product, EPA Reg No. 58199-1. A product claiming to be substantially similar to a currently registered product, and coded as a B660 under PRIA 3, must bear the same use pattern as the currently registered product. Adding to or changing existing use patterns excludes the proposed product from treatment as a substantially similar product. Deleting use patterns is acceptable.	Your product label must be identical to the product label for EPA Reg No. 58199-1.

BPPD Substantially Similar and Technical Screen checklist for a B660 - DRAFT

This checklist is used to determine if a pending pesticide product application is substantially similar/identical to a currently registered pesticide product. **This checklist is done in addition to the B660 technical screen checklist.** Checklist is based on the B660 PRIA action code interpretation found on the PRIA 3 Determination Decision Tree on the Agency's website. Please refer to the excerpted text below. Then fill out the checklist. Please note that if any of these criteria are not met then the product cannot be considered substantially similar and this would be one of the criteria to fail the 45-day Technical Screen.

Once Substantial Similarity/100% Repack has been established then proceed to the Substantially Similar/100% Repack Technical Screen Checklist.

Excerpted from PRIA Decision Tree: "B660 Action code Interpretation: An application for registration of an end-use or a manufacturing use microbial or biochemical pesticide product that is substantially similar, identical in its uses and formulation, ***or that differs only in ways that would not significantly increase the risk of unreasonable adverse effects on the environment to products that are currently registered and, which contains a registered source of active ingredient.*** If the proposed new product contains an unregistered source of active ingredient, then see category B672. The applicant must identify the similar registered products for all active ingredients in the proposed product. All applications require the following:

- A data matrix is required with the application if it is not a 100% re-packaged product.
- Product chemistry data (Group A and B) unless the product is identical (e.g., 100% repackaged product). In some cases, product chemistry data can be satisfied as outlined in Pesticide Registration Notice 98-1.
- The active ingredient(s) must be currently registered and the CSF must include its EPA Registration Number(s).
- In all cases, the registrant must identify the registered similar product for this category.
- Acute toxicity requirements must be addressed by using:
    1. The cite-all method
    2. Selective data citation where the applicant owns all required data, or
    3. Applicant submits specific authorization letter from the data owner

The application is not in this category if efficacy, acute toxicity, companion animal safety, and/or child resistant packaging data are submitted and must be reviewed to support the application. The application does not fall into this category if it contains a request to waive any of these data. An application that requires review of cited or submitted data other than product chemistry does not belong in this fee category. If the use pattern on the TGAI differs from the proposed products, then additional data are required and the application does not fall within this category.

Substantially similar: Product must have the same active ingredient, in substantially the same proportion, same chemical composition (solid, liquid, granular), and substantially similar inert

ingredients as the already registered product. In addition, substantially similar means that the proposed product bears the same use pattern. Adding to or changing existing use patterns excludes the proposed product from treatment as a substantially similar product. Deleting use patterns is acceptable.

Identical: Same composition and use patterns as a currently registered end-use product.

Manufacturing Use Product: A 100% re-package of a manufacturing use product that requires no data submission or data matrix is covered by this category."

Excerpted from Chapter 2 of the Pesticide Registration Manual:

"Identical/Substantially Similar (Formerly "Me-Too") Product

An "Identical/Substantially Similar" pesticide registration application refers to a request to register a new pesticide product that is identical in its uses and formulation or substantially similar in its uses and formulation to one or more products that are currently registered and marketed in the United States or differs only in ways that would not significantly increase the risk of unreasonable adverse effects on the environment. (This section discusses only new "identical/substantially similar" product registrations. Chapter 6 of this document includes a discussion of "identical/substantially similar" amendments. Chapter 10 discusses data compensation issues for both.)

Common terms used for some "identical/substantially similar" products are:

- Identical Repack Registrations – A complete (100%) repackaging of an identical, already-registered product, where an identical label is used for the product other than name, address, name of product, and registration number.
- Old Chemical New Product Registrations – A previously registered active ingredient that is being reformulated to make a new product with the same use pattern as the registered active ingredient. (Note: the applicant will be required to explain how the labeling has been derived and justify certain aspects of the labeling. This is fully explained in Chapter 10.)

Important Note: The following examples illustrate when an application is not considered to be an "identical/substantially similar" product. These are differences between the currently registered product and the application for registration:

- the maximum use rate of the product is increased beyond that which is currently registered;
- a pre-harvest interval (PHI) is changed; or
- any other changes are made that might affect the pesticide residues in food or feed commodities or exposure to nontarget organisms.

Other examples are provided in the section titled "Review of Applications for Identical/Substantially Similar (Formerly "Me-Too") Products." Also note that for "identical/substantially similar" product applications, the source (producer or manufacturer) of the active ingredient must be registered. A product with an unregistered source will not be considered an "identical/substantially similar" product."

BPPD Substantially Similar and Technical Screen checklist for a B660 - DRAFT

Date: July 7, 2015

Review Date: June 12, 2015

File Symbol No.: 90930-G

EPA Reg No. application is claiming substantial similarity too: 58199-1

Reviewers: Clara Fuentes and Gina Burnett

Comments: *note if any calls to the registrant were made*

Determination of similarity (Yes/No): yes

Hours Worked: 4 +1 = 5

1) Is this application a 100% repack? No

If ***NO***, proceed to the Checklist for Substantial Similarity.

If ***YES***, proceed to the Checklist for 100% Repack

We need methods for some of the physical/chemical characteristics in MRID 496347-01, specified below:

Description of methods for OCSPP 830.6302 determination of color; 830.6303 physical state; 830.6304 odor; 830.7000 pH; 830.7100 viscosity; 830.7300 density and relative gravity OCSPP 830.1700.

Preliminary Analysis, and OCSPP 830.1800 Enforcement Analytical Method; OCSPP 830.6317 Storage Stability, and OCSPP 830.6320 Corrosion Characteristics.

Storage stability and Corrosion characteristics were waived in past registrations of similar products however, those data are required.

Registrant needs to submit Preliminary analysis (the same as 5 batch analysis) for concentration of a.i. in the product, and suitable for enforcement purposes. They submitted a bioassay that consisted of product applications to radish cotyledons to demonstrate activity of the product. That is more like an efficacy test than a 5 batch analysis suitable for enforcement purposes.

BPPD Substantially Similar and Technical Screen checklist for a B660 - DRAFT

Checklist for substantial similarity					
	Checklist Item	**Yes**	**No**	**N/A**	**Comments**
1.	Is the product that the applicant is claiming to be substantially similar too currently registered? Note: The product that the applicant that is claiming to be substantially similar too must be currently registered. They cannot claim to be substantially similar to a cancelled or pending pesticide product.	X			
2.	Is the active ingredient of the pending application from a registered source? There should be an EPA reg. no. on the pending product's CSF for the active ingredient. The active ingredient(s) must be currently registered and the CSF must include its EPA Registration Number(s). If multiple a.i.'s all need to be from a registered source.	X			
3.	Amount of Active Ingredient: Is the amount of a.i. of the pending product lower than the amount of a.i of the cited product? A judgement call on the toxicity of the inert ingredients would be needed here from the science reviewer(for example water is the added inert). **FYI:** RD does take this into consideration for its Similarity Clinic.		x		

BPPD Substantially Similar and Technical Screen checklist for a B660 - DRAFT

4.	Is the pending product composition similar to the registered product the applicant claiming substantial similarity too? The CSF of the pending product will need to be compared to the most recent CSF of the registered product. A science reviewer will need to do this. The pending product must have the same active ingredient, in substantially the same proportion, same chemical composition (solid, liquid, granular), and substantially similar inert ingredients as the already registered product.	x			
5.	Labeling/ Use Sites: Are the use site/rates of the pending product the same as the registered product? Note: Substantially similar also means that the proposed product bears the same use pattern. Adding to or changing existing use patterns excludes the proposed product from treatment as a substantially similar product. Deleting use patterns is acceptable.	x			With addition of new uses in hydroponics, grapes and turf.
6.	A data matrix is required with the application if it is not a 100% re-packaged product.	x			

BPPD Substantially Similar and Technical Screen checklist for a B660 - DRAFT

7.	Product chemistry data (Group A and B) unless the product is identical (e.g., 100% repackaged product) is required. In some cases, product chemistry data can be satisfied as outlined in Pesticide Registration Notice 98-1.	X			Deficiencies found
8.	Acute toxicity requirements must be addressed by using: a. The cite-all method. b. Selective data citation where the applicant owns all required data, or c. Applicant submits specific authorization letter from the data owner	x			Cite-all
9.	Does the application contain efficacy, acute toxicity, companion animal safety, and/or child resistant packaging data or waiver requests for these data? **Note:** The application is not in this category if efficacy, acute toxicity, companion animal safety, and/or child resistant packaging data are submitted and must be reviewed to support the application. The application does not fall into this category if it contains a request to waive any of these data.		x		

BPPD Substantially Similar and Technical Screen checklist for a B660 - DRAFT

10.	Does the application require review of review of cited or submitted data other than product chemistry? **Note:** An application that requires review of cited or submitted data other than product chemistry does not belong in this fee category.		x		
11.	Does the use pattern on the TGAI differ from the proposed product? **Note:** If the use pattern on the TGAI differs from the proposed products, then additional data are required and the application does not fall within this category.		x		

BPPD Substantially Similar and Technical Screen checklist for a B660 - DRAFT

Technical Screen Checklist for Substantially Similar/100% Repack					
	Checklist Item	**Yes**	**No**	**N/A**	**Comments**
1.	**Forms**				
a.	8570-1: Application for Registration		x		
b.	8570-4: CSF	x			
c.	8570-27: Formulator's Exemption		x		
d.	8570-34: Certification with Respect to Data		x		
e.	8570-35: Data Matrix (Not required for 100% repack) Has the Offer to Pay Box on the Certification with Respect to Citation of data Form? Does the Matrix Indicate Pay? Are any of the data that you are citing compensable? Has an Offer To Pay been made? Is documentation of said offer included in this application (Refer to 40 CFR 152.86 Cite All Method and/or 152.90 Selective Method)?	x			
2.	**Confidential Statement of Formula (CSF)-review for alternate formulations too**				
a.	Signed and dated	x			
b.	Food-use? (If no, skip to 1e.)	x			
c.	Active cleared for food-use	x			*List exemption*
d.	Units in all applicable boxes	x			
e.	Is Reg. No. of source of AI on CSF?	x			
f.	Does CSF indicate that the product is a repack of an existing product and list registration number?		x		

BPPD Substantially Similar and Technical Screen checklist for a B660 - DRAFT

g.	Does CSF indicate supplier of repackaged product?			x	
3.	**Label**				
a.	Restricted Use Pesticide statement (If applicable)			x	
b.	Product name, brand or trademark	x			
c.	Ingredient statement correct? Microbial: strain designation Microbial: potency designation	x			
d.	"Keep Out of Reach of Children" (KOOROC) Statement	x			
e.	Signal word	x			
f.	First aid statement	x			
g.	Net contents/net weight	x			
h.	EPA Reg. No. and Establishment No.	x			Need to write Est. No. on label
i.	Company name and address	x			
j.	Precautionary statement: hazards to human and domestic animals Microbial: dusk mask statement	x			
k.	Environmental hazards	x			
l.	Physical and chemical hazards (if app.)			x	
m.	Directions for use	x			
m.	Storage and disposal	x			
o.	Warranty statement	x			
p.	Worker protection	x			
q.	Batch code	x			

Decision #: 505226
DP #: (427652)
PRIA
Parent DP #:
Submission #: 968644
E-Sub #:

DATA PACKAGE BEAN SHEET

Date: 04-Jun-2015

* * * Registration Information * * *

Registration: 90930-G - CYTOKIN BIOREGULATOR CONCENTRATE

Company: 90930 - MILLER CHEMICAL & FERTILIZER, LLC

Risk Manager: RM 91 - Andrew Bryceland - (703) 305-6928 Room# PY1 S-8911

Risk Manager Reviewer: Gina Burnett GBURNETT

Sent Date: PRIA Due Date: 08-Oct-2015 Edited Due Date:

Type of Registration: Product Registration - Section 3

Action Desc: (B660) NEW PRODUCT;MICROBIAL/BIOCHEMICAL;REGISTERED SOURCE OF ACTIVE IN

Ingredients: 116801, Cytokinin (as kinetin)(.01%)

* * * Data Package Information * * *

Expedite: ○ Yes ● No Date Sent: 04-Jun-2015 Due Back: 7/9/2015

DP Ingredient: 116801, Cytokinin (as kinetin)

DP Title:

CSF Included: ● Yes ○ No Label Included: ● Yes ○ No Parent DP #:

Assigned To	Date In	Date Out

Organization: BPPD / BPB

Team Name: RM 91

Reviewer Name: Jones, Russell

Contractor Name:

Last Possible Science Due Date: 08-Sep-2015

Science Due Date:

Sub Data Package Due Date:

* * * Studies Sent for Review * * *

Printed on Page 2

* * * Additional Data Package for this Decision * * *

No Additional Data Packages

* * * Data Package Instructions * * *

Russ / Margarita please assign for Tech Screen and Full Review for this B660 (substantially similar) new product.

Science reviewer must provide the science review memo and the tech screen checklists to the RAL by 7/9/15.

Let me know if you have any questions -
Thanks,
Gina

DP#: (427652) *** Studies Sent for Review *** Decision#: (505226)

MRID	MRID Status	Citation Reference	Guideline	86-5 Status
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.1750/Certified limits	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.6302/Color	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.6303/Physical state	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.6304/Odor	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.6313/Stability to normal and elevated temperatures, metals, and metal ions	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.6314/Oxidizing or reducing action	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.6315/Flammability	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.6316/Explodability	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.6317/Storage stability	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.6319/Miscibility	Pass (28-May-2015)

DP#: (427652) *** Studies Sent for Review *** Decision#: (505226)

MRID	MRID Status	Citation Reference	Guideline	86-5 Status
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.6320/Corrosion characteristics	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.6321/Dielectric breakdown voltage	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.7000/pH	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.7050/UV/Visible absorption	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.7100/Viscosity	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.7200/Melting point/melting range	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.7220/Boiling point/boiling range	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.7300/Density/relative density	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.7370/Dissociation constants in water	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.7550/Partition coefficient (n-octanol/water), shake flask method	Pass (28-May-2015)

DP#: (427652) *** Studies Sent for Review *** Decision#: (505226)

MRID	MRID Status	Citation Reference	Guideline	86-5 Status
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.7560/Partition coefficient (*n*-octanol/water), generator column method	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.7570/Partition coefficient (n-octanol/water), estimation by liquid chromatography	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.7840/Water solubility: Column elution method, shake flask method	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.7860/Water solubility, generator column method	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	830.7950/Vapor pressure	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	880.1100/Product identity and composition	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	880.1200/Description of starting materials, production and formulation process	Pass (28-May-2015)
49634701		Mandava, N. (2015) Cytokin Bioregulator Concentrate Biochemical Pesticides Product Chemistry Data in Support of FIFRA Registration. Project Number: CYTOKIN/BIOREGULATOR/CONCENTRATE/ Unpublished study prepared by Mandava Asssociates, LLC. 38p.	880.1400/Discussion of formation of impurities	Pass (28-May-2015)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

May 22, 2015

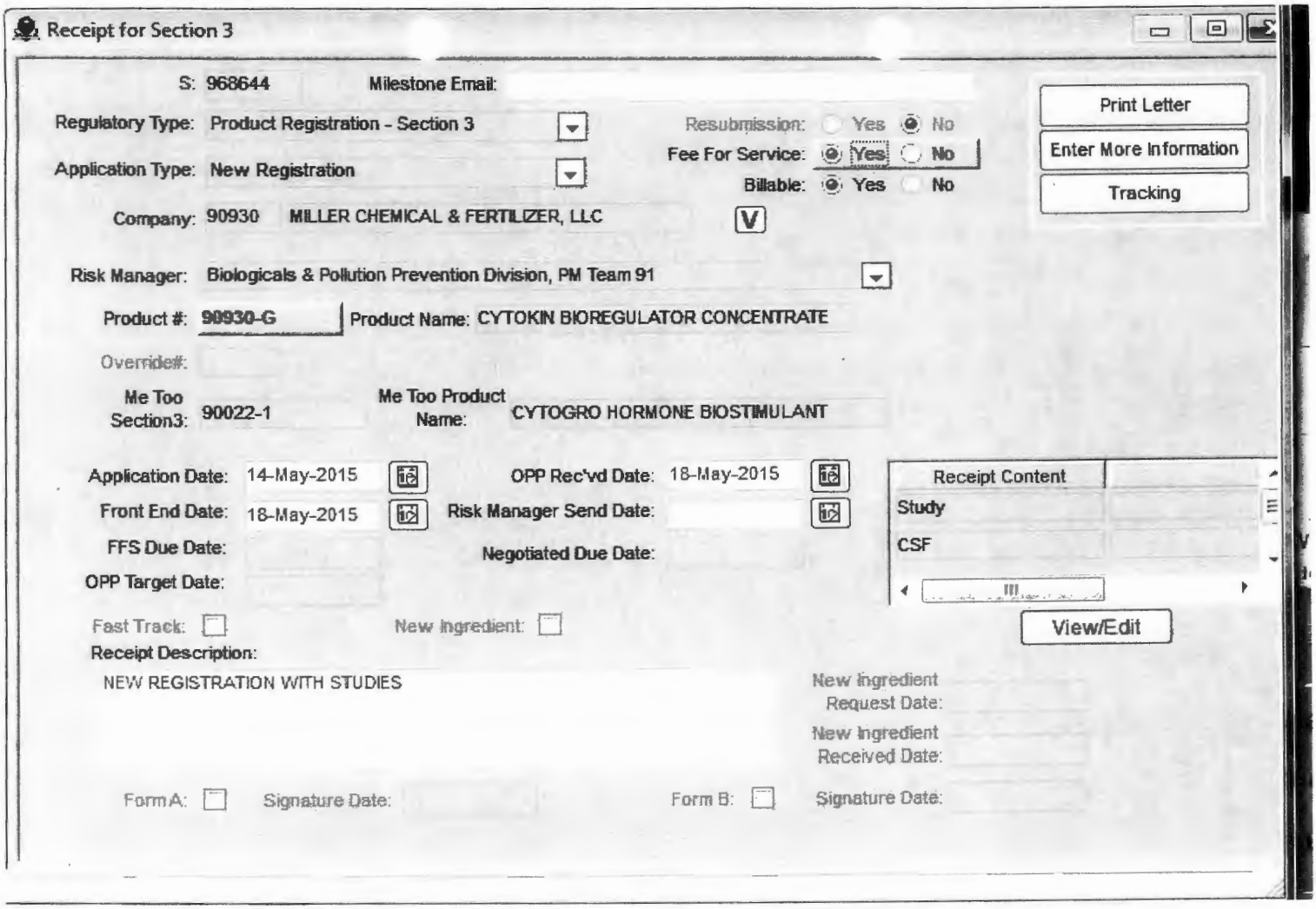
OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

MANDAVA ASSOCIATES, LLC
1050 CONNECTICUT AVENUE, N.W. Suite 1000
WASHINGTON, DC 20036

Report of Analysis for Compliance with PR Notice 11-03

Thank you for your submittal of 18-MAY-15. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your submittal was found to be in full compliance with the standards for submission of data contained in PR Notice 11-03. A copy of your bibliography is enclosed, annotated with Master Record ID's (MRIDs) assigned to each document submitted. Please use these numbers in all future references to these documents. Thank you for your cooperation. If you have any questions concerning this data submission, please raise them with the cognizant Product Manager, to whom the data have been released.


Receipt for Section 3
S: 968644
Milestone Email:
Regulatory Type: Product Registration - Section 3
Application Type: New Registration
Company: 90930 MILLER CHEMICAL & FERTILIZER, LLC
Resubmission: Yes No
Fee For Service: Yes No
Billable: Yes No
Print Letter
Enter More Information
Tracking
Risk Manager: Biologicals & Pollution Prevention Division, PM Team 91
Product #: 90930-G
Product Name: CYTOKIN BIOREGULATOR CONCENTRATE
Override#:
Me Too Section3: 90022-1
Me Too Product Name: CYTOGRO HORMONE BIOSTIMULANT
Application Date: 14-May-2015
OPP Rec'vd Date: 18-May-2015
Front End Date: 18-May-2015
Risk Manager Send Date:
FFS Due Date:
Negotiated Due Date:
OPP Target Date:
Receipt Content
Study
CSF
Fast Track:
New Ingredient:
View/Edit
Receipt Description:
NEW REGISTRATION WITH STUDIES
New Ingredient Request Date:
New Ingredient Received Date:
Form A:
Signature Date:
Form B:
Signature Date:

MANDAVA ASSOCIATES, LLC

CONSULTANTS IN SCIENCE, TECHNOLOGY AND REGULATORY AFFAIRS
1050 CONNECTICUT AVENUE, N.W., SUITE 1000, WASHINGTON, DC 20036
TELEPHONE: (202)-223-1424/1747 ≅ TELEFAX: (202)-223-0141 ≅ E-Mail: mandava@compuserve.com

Hand Delivered

May 14, 2015

Ms. Linda A. Hollis (PM 91)
Biochemical Pesticide Branch
Biopesticides and Pollution Prevention Division
Office of Pesticide Programs
U.S. Environmental Protection Agency
Washington, D.C. 20460

SUBJECT: APPLICATION FOR NEW PRODUCT– "ME-TOO" B660
Product Name: **Cytokin® Bioregulator Concentrate**
Active Ingredient: Mixed Cytokinins as Kinetin
Company Name: Miller Chemical & Fertilizer, LLC
Company Number: 90930

PRIA Category: B660, PRIA FEE: $1,217.00,
Review Time: 4 Months

Dear Ms. Hollis:

On behalf of Miller Chemical & Fertilizer, LLC, we are submitting an application for the registration of ***CYTOKIN® BIOREGULATOR CONCENTRATE*** which is an **end use product** identical or substantially similar in composition, use, and labeling to Cytokin® Bioregulator Concentrate; EPA Reg. No. 58199-1.

In support of the application for the end-use product, we have developed the product chemistry data on Cytokin® Bioregulator Concentrate.

Attached please find the following documents in support of the application for Cytokin® Bioregulator Concentrate.

1) Application for Pesticide Registration (EPA Form 8570-1)

2) Copy of Registration Fee Payment

3) Confidential Statement of Formula (EPA Form 8570-4)

4) Certification with Respect to Citation of Data (EPA Form 85720-34)

5) Data Matrix (EPA Form 8570-35)

6) Five Copies of Draft Labeling for the Subject Product

7) Volume 1: CYTOKIN® BIOREGULATOR CONCENTATE. Biochemical Pesticide Product Chemistry Data in Support of FIFRA Registration. Data Requirement: 40 CFR 158.2030: OPPTS Series 830 and 880; Project Number: Cytokin® Bioregulator Concentrate – Cyto-Volume 1.

The product chemistry data for the subject product was developed on behalf of Miller Chemical & Fertilizer, LLC.

Sincerely,

N. Bhushan Mandava, Ph.D., RAC
Agent for Miller Chemical & Fertilizer, LLC

Enclosure

TRANSMITTAL DOCUMENT

NAME AND ADDRESS OF SUBMITTER:

Miller Chemical & Fertilizer, LLC
c/o Mandava Associates, LLC
1050 Connecticut Avenue, Suite 1000
Washington, DC 20036

REGULATORY ACTION SUPPORTED BY THIS PACKAGE:

FIFRA Registration Application for:

Product Name:	Cytokin® Bioregulator Concentrate
Active Ingredient:	Mixed Cytokinins as Kinetin
Company Name:	Miller Chemical & Fertilizer, LLC
EPA Company Number:	90930
EPA File Symbol:	Not Assigned

TRANSMITTAL DATE:

May 14, 2015

LIST OF SUBMITTED STUDIES:

1) Volume 1: CYTOKIN® BIOREGULATOR CONCENTATE. Biochemical Pesticide Product Chemistry Data in Support of FIFRA Registration. Data Requirement: 40 CFR 158.2030: OPPTS Series 830 and 880; Project Number: Cytokin® Bioregulator Concentrate – Cyto-Volume 1.

49634701

COMPANY OFFICIAL

N. Bhushan Mandava, Ph.D., RAC
Agent for Miller Chemical & Fertilizer, LLC

COMPANY CONTACT:

N. Bhushan Mandava, Ph.D.
Mandava Associates, LLC
1050 Connecticut Avenue, Suite 1000
Washington, D.C. 20036
Tel : (202) 223-1424/1747
Fax : (202) 223-0141

21-Day Screen Completed by Contractor

21-Day Expires on 6-8-15

Jacket # 90930-G
MRID# 496347

Content Screen: Recommend to Pass / Fail

11-3 Review: Pass / Fail / NA

Overall Status: Recommend to Pass / Fail

Transfer This Jacket to:

ANDREW BRYCCLAND

Inert ingredient information may be entitled to confidential treatment

PRIA 3 – 21 Day Content Screen Review Worksheet

(EPA/OPP Use Only)

September 2012

21 Day Screen Start Date: 5-18-15

Experts In-Processing Signature: B.B. Date 5-22-15 Fee Paid: Yes ✓

Division management contacted on issues No_____ Yes _____ Date _____

EPA Reg. Number: 90930 -G	EPA Receipt Date: 5-18-15

	Items for Review	Yes	No	N/A*
1	**Application Form** (EPA Form 8570-1) signed & complete including package type	X		
2	**Confidential Statement of Formula** all boxes completed, form signed, and dated (EPA Form 8570-4)	X		
	a) All inerts, including fragrances, approved for the proposed uses (see Footnote A) yes / no. Active ingredient [redacted]			
3	**Certification with Respect to Citation of Data** (EPA Form 8570-34) completed and signed (N/A if 100% repack)	X		
	Certificate and data matrix consistent	X		
	If applicant is relying on data that are compensable, is the offer to pay statement included. (see Footnote B) yes / no			
	If applicable, is there a letter of Authorization for exclusive use only.			
4	**Formulator's Exemption Statement** (EPA Form 8570-27) completed and signed (N/A if source is unregistered or applicant owns the technical)			X
5	**Data Matrix** (EPA Form 8570-35) both internal and external copies (PR 98-5) completed and signed (N/A if 100% repack)	X		
	a) Selective Method (Fee category experts use) yes / no	X		
	b) Cite-All (Fee category experts use)			
	c) Applicant owns all data (Fee category experts use)			
6	**5 Copies of Label (Electronic labels on CD are encouraged and guidance is available)**	X		
7	**Is the data package consistent with PR Notice 86-5**	X		
8	**Notice of Filing included with petitions**			X

Inert ingredient information may be entitled to confidential treatment

9	**If applicable for conventional applications, <u>reduced risk rationale</u>**			X
	<u>Required Data</u> and/or data waivers. See Footnote C.			
10	a) List study (or studies) not included with application			

Comments:

Documentation: Pass

- Required forms are complete.

Inerts:

Active ingredient and [redacted]

II-3, Pass

MRID- 44634?

Status: Pass

TC Status

* N/A -- Not Applicable

Footnotes

A. During the 21 day initial content review, all CSFs will be reviewed to determine whether all inerts listed, including fragrances, are approved for the proposed uses or have an application pending with the Agency. If an unapproved inert with no application pending with the Agency is identified, the applicant must either 1) resolve the inert issue by, for example, removing the inert, substituting it with an approved inert, submitting documentation that EPA approved the inert for the proposed pesticidal uses, correcting mistakes on the CSF, etc. or 2) provide the data to support OPP approval of the inert or 3) withdraw the application. Removing or substituting an inert ingredient will require a new CSF and may require submission of data. All information, forms, data and documentation resolving the inert issue must have been received by the Agency or the application withdrawn within the 21 day period, otherwise, the Agency will reject the application as described below.

To successfully complete this aspect of the 21 day initial content screen, applicants are **strongly encouraged** to verify that all inert ingredients have been approved for the application's uses or have an application pending with the Agency **even if a product is currently registered** by consulting the inert Web site and if the inert is not approved nor has an application pending with the Agency, to **obtain the necessary inert approval prior to submitting an application to register a pesticide product containing that inert ingredient.** Some inert ingredients are no longer approved for food uses or certain types of uses. The name and/or CAS number on a CSF must match the name and CAS number on this web site. Simple typographical errors in the name or CAS number have resulted in processing delays.

If an inert is not listed on the inert ingredient web site and the applicant believes that the inert has been approved, the applicant should contact the Inert Ingredient Assessment Branch (IIAB) at inertsbranch@epa.gov and resolve the issue. Copies of the correspondence with IIAB resolving the issue should accompany the application. All new inerts except PIP inerts are reviewed by IIAB. The IIAB should also be contacted for any questions on what supporting data needs to be submitted for and the Agency's inert review process. Questions on PIP inerts should be directed to the Chief of Microbial Pesticides Branch.

When a brand, trade, or proprietary name of an inert ingredient is listed on a CSF, additional information such as an alternate name of the inert, CAS number or other information must also be included to enable the Agency to determine if it has been approved. Each component of an inert mixture (including a fragrance) must be identified. In some cases, the supplier of the mixture or fragrance may need to provide this information to the Agency. Prior to the Agency's receipt of an application, applicants must arrange with a proprietary mixture or fragrance supplier to provide the component information to the Agency or promptly upon EPA's request. If the inert ingredients in a proprietary blend (including fragrances) cannot or are not identified or provided within the 21-day content review period, the Agency will reject the application.

During the 21 day content review, applicants should submit information to the individual identified by the Agency when the applicant is informed of an unapproved inert.

Unapproved Inerts Identified on CSFs

All applications except conventional new products and PIPs

Once an unapproved inert is identified on a CSF, the Agency will contact the applicant with the following options:

1. Correct the application by, for instance, correcting the inert's identity or CAS number, providing documentation that the inert has been approved, or removing the unapproved inert from the CSF or replacing it with one that is approved for the application's uses; or

2. Provide the required information necessary to identify an inert approval application that is pending with the Agency; or

3. Submit the information and data needed for the Agency to approve the unapproved inert. If this option is selected and implemented, the Agency may request an extension in the PRIA decision review timeframe to accommodate the inert review/approval process;

4. Withdraw the application (the Agency retains 25% of the full fee for the fee category estimated); or

If none of these options is selected and implemented by the applicant within the 21 day content review period, the Agency will reject the application and retain 25% of the full fee of the category identified.

Conventional New Product Applications

When the Registration Division identifies an unapproved inert on a CSF with an application for a new product that the applicant has not identified as requiring an inert approval (R300 or R301), it will contact the applicant with the following options:

1. Correct the application by, for instance, correcting the inert's identity or CAS number, providing documentation that the inert has been approved, or removing the unapproved inert from the CSF or replacing it with one that is approved for the application's uses; or

2. Submit the information and data needed for the Agency to approve the unapproved inert, including any required petition to establish or amend a tolerance or exemption from a tolerance. (This option may change the PRIA category for the application, which could require a longer decision review time and a larger fee. If additional fees are due, they must be received by the Agency within the 21 day content review period.)

3. Withdraw the application (the Agency retains 25% of the full fee for the fee category estimated); or

If none of the above options is selected and implemented during the 21-day content-review period, the Agency will reject the application and retain 25% of the appropriate fee for the new product-inert approval category.

PIP Applications

When the Biopesticide and Pollution Prevention Division identifies an unapproved inert on a PIP CSF and a request to approve the inert does not accompany the application, it will contact the applicant with the following options:

1. Correct the application by, for instance, correcting the spelling or name of the inert to that in 40 CFR 174, or providing documentation that the inert has been approved; or

2. Submit the information and data needed for the Agency to approve the unapproved inert. If an inert ingredient tolerance exemption petition is required, the petition must be received by the Agency and the B903 fee paid within the 21 day period. If this option is selected and implemented, the Agency will discuss harmonizing the timeframe for both actions.

3. Withdraw the application (the Agency retains 25% of the full fee for the fee category estimated); or

If none of the above options is selected and implemented during the 21 day content review period, the Agency will reject the application and retain 25% of the fee.

B. A policy on documentation of offers to pay is still being developed, however, for a me-too or fast track (similar/identical) new product, R300 or A530, an application without the necessary authorizations of offers to pay will be placed into either R301 or A531. The Agency recommends that authorizations of offers to pay be submitted with other PRIA applications to avoid delays in the Agency's decision.

C. Biopesticide applicants are advised to contact the Agency and discuss study waivers prior to submitting their application to the Agency. Documentation of such discussions should be submitted with the study waiver.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

May 21, 2015

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

OPP Decision Number: D-505226
EPA File Symbol or Registration Number: 90930-G
Product Name: CYTOKIN BIOREGULATOR CONCENTRATE
EPA Receipt Date: 18-May-2015
EPA Company Number: 90930
Company Name: MILLER CHEMICAL & FERTILIZER, LLC

MR. CHARLES H. SVEC
MILLER CHEMICAL & FERTILIZER, LLC
120 RADIO ROAD, PO Box 333
HANOVER , PA 17331-

SUBJECT: Receipt of Registration Application Subject to Registration Service Fee

Dear Registrant:

The Office of Pesticide Programs has received your application and certification of payment. If you submitted data with this application, the results of the PRN-2011-3 screen will be communicated separately. During the administrative screen, the Office of Pesticide Programs has determined that this Action is subject to a Pesticide Registration Service Fee as defined in the Pesticide Registration Improvement Act.

The Action has been identified as Action Code: B660

NEW PRODUCT;MICROBIAL/BIOCHEMICAL;REGISTERED SOURCE OF ACTIVE INGREDIENT;ME-TOO;

No additional payment is due at this time. If you have any questions, please contact the Pesticide Registration Service Fee Ombudsman at (703) 347-0107.

Sincerely,

Front End Processing Staff
Information Technology & Resources Management Division

cc: N. Bhushan Mandava, Ph.D., RAC, Mandava Associates, LLC

Fee for Service {968644E~

This package includes the following

- (•) New Registration
- ( ) Amendment

for Division

- ( ) AD
- (•) BPPD
- ( ) RD

[x] Studies? [ ] Fee Waiver?

[ ] volpay % Reduction: ___

Risk Mgr. 91

Receipt No. S- 968644

EPA File Symbol/Reg. No. 90930-G

Pin-Punch Date: 5/18/2015

This item is NOT subject to FFS action.

Action Code:

Requested: B660

Granted: B660

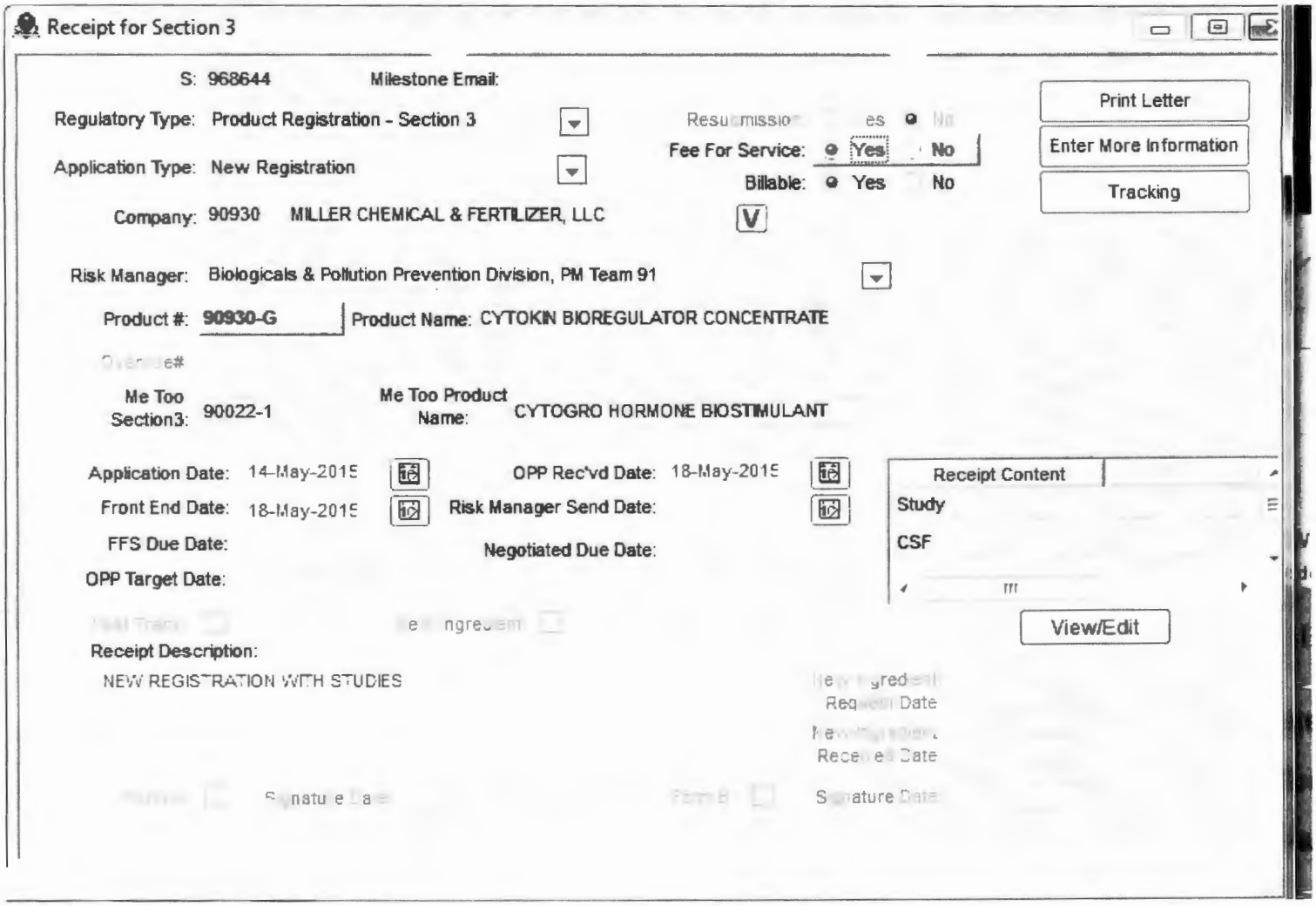
Amount Due: $ _____

Parent/Child Decisions:

[■] Inert Cleared for Intended Use [■] Uncleared Inert in Product

Reviewer: Andrew Bycelund Date: 5-21-15

Remarks:


Receipt for Section 3
S: 968644
Milestone Email:
Regulatory Type: Product Registration - Section 3
Application Type: New Registration
Company: 90930 MILLER CHEMICAL & FERTILIZER, LLC
Fee For Service: Yes No
Billable: Yes No
Print Letter
Enter More Information
Tracking
Risk Manager: Biologicals & Pollution Prevention Division, PM Team 91
Product #: 90930-G
Product Name: CYTOKIN BIOREGULATOR CONCENTRATE
Me Too Section3: 90022-1
Me Too Product Name: CYTOGRO HORMONE BIOSTIMULANT
Application Date: 14-May-2015
Front End Date: 18-May-2015
FFS Due Date:
OPP Target Date:
OPP Rec'vd Date: 18-May-2015
Risk Manager Send Date:
Negotiated Due Date:
Receipt Content
Study
CSF
View/Edit
Receipt Description:
NEW REGISTRATION WITH STUDIES

Bhushan Mandava

From: notification@pay.gov [notification@pay.gov] **Sent:** Thu 5/14/2015 5:38 PM
To: Bhushan Mandava
Cc:
Subject: Pay.gov Payment Confirmation: PRIA Service Fees
Attachments:

Your payment has been submitted to Pay.gov and the details are below. If you have any questions regarding this payment, please contact Michael Yanchulis at (703) 347-0237 or yanchulis.michael@epa.gov.

Application Name: PRIA Service Fees
Pay.gov Tracking ID: 25LAS1AV
Agency Tracking ID: 74804236358
Transaction Type: Sale
Transaction Date: 05/14/2015 05:38:08 PM EDT

Account Holder Name: Naga B Mandava

Transaction Amount: $1,217.00
Billing Address: [redacted]
Billing Address 2:
City: [redacted]
State/Province: [redacted]
Zip/Postal Code: [redacted]
Country: USA
Card Type: Visa
Card Number: **********4810

Registration Number:
Company Name: Miller Chemical Fertili
Company Number: 90930
Action Code: B660

THIS IS AN AUTOMATED MESSAGE. PLEASE DO NOT REPLY.

Personal privacy information

Please read instructions on reverse before completing form. Form Approved. OMB No. 2070-0060. Approval expires 2-28-95

EPA

United States
Environmental Protection Agency
Washington, DC 20460

☑ **Registration**
☐ **Amendment**
☐ **Other**

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number	2. EPA Product Manager	3. Proposed Classification
90930-	Linda A. Hollis	☐ None ☐ Restricted
4. Company/Product (Name)	**PM#**	
Cytokin® Bioregulator Concentrate	91	

5. Name and Address of Applicant *(Include ZIP Code)*

Miller Chemical & Fertilizer, LLC
120 Radio Road
Hanover, PA 17331

☐ *Check if this is a new address*

6. Expedited Reveiw. In accordance with FIFRA Section 3(c)(3)(b)(i), my product is similar or identical in composition and labeling to:
EPA Reg. No. 58199-1
Product Name Cytokin® Bioregulator Concentrate

Section - II

☐ Amendment - Explain below.
☐ Resubmission in response to Agency letter dated _____
☐ Notification - Explain below.
☐ Final printed labels in repsonse to Agency letter dated _____
☑ "Me Too" Application.
☐ Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)

1) Application for FIFRA Section 3 Registration. Submission of Product Chemistry & other required data in support of registration of Cytokin® Bioregulator Concentrate which is a end use product.
2) PRIA Category: B660, PRIA FEE: $1,217.00
3) The company Number is 90930. The file symbol is not assigned.
4) Please direct all correspondence to: Mandava Associates, LLC; 1050 Connecticut Avenue, NW / Suite 1000; Washington, D.C. 20036
5) The contact Person fax number is (202) 223 - 0141 and e-mail address is: mandava@compuserve.com.

Section - III

1. Material This Product Will Be Packaged In:

Child-Resistant Packaging	Unit Packaging	Water Soluble Packaging	2. Type of Container
☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No	☐ Metal ☑ Plastic ☐ Glass ☐ Paper ☐ Other (Specify) _____
* *Certification must be submitted*	If "Yes" Unit Packaging wgt. / No. per container	If "Yes" Package wgt / No. per container	

3. Location of Net Contents Information	4. Size(s) Retail Container	5. Location of Label Directions
☑ Label ☐ Container	1, 10, 100 Gallons	☑

6. Manner in Which Label is Affixed to Product ☑ Lithograph ☐ Paper glued ☐ Stenciled ☐ Other _____

Section - IV

1. Contact Point *(Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)*

Name	Title	Telephone No. (Include Area Code)
N. Bhushan Mandava	Agent for Miller Chemical & Fertilizer, LLC	(202) 223-1424

Certification

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowlingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

6. Date Application Received (Stamped)

2. Signature	3. Title
N. Bhushan Mandava	Agent for Miller Chemical & Fertilizer, LLC
4. Typed Name	**5. Date**
N. Bhushan Mandava	May 14, 2015

97

EPA Form 8570-1 (Rev. 3-94) Previous editions are obsolete. White - EPA File Copy (original) Yellow - Applicant Copy

MANDAVA ASSOCIATES, LLC

CONSULTANTS IN SCIENCE, TECHNOLOGY AND REGULATORY AFFAIRS
1050 CONNECTICUT AVENUE, N.W., SUITE 1000, WASHINGTON, DC 20036
TELEPHONE: (202)-223-1424/1747 ≅ TELEFAX: (202)-223-0141 ≅ E-Mail: mandava@compuserve.com

Hand Delivered

May 14, 2015

Ms. Linda A. Hollis (PM 91)
Biochemical Pesticide Branch
Biopesticides and Pollution Prevention Division
Office of Pesticide Programs
U.S. Environmental Protection Agency
Washington, D.C. 20460

SUBJECT: APPLICATION FOR NEW PRODUCT– "ME-TOO" B660
Product Name: **Cytokin® Bioregulator Concentrate**
Active Ingredient: Mixed Cytokinins as Kinetin
Company Name: Miller Chemical & Fertilizer, LLC
Company Number: 90930

PRIA Category: B660, PRIA FEE: $1,217.00,
Review Time: 4 Months

Dear Ms. Hollis:

On behalf of Miller Chemical & Fertilizer, LLC, we are submitting an application for the registration of ***CYTOKIN® BIOREGULATOR CONCENTRATE*** which is an **end use product** identical or substantially similar in composition, use, and labeling to Cytokin® Bioregulator Concentrate; EPA Reg. No. 58199-1.

In support of the application for the end-use product, we have developed the product chemistry data on Cytokin® Bioregulator Concentrate.

Attached please find the following documents in support of the application for Cytokin® Bioregulator Concentrate.

1) Application for Pesticide Registration (EPA Form 8570-1)

2) Copy of Registration Fee Payment

3) Confidential Statement of Formula (EPA Form 8570-4)

4) Certification with Respect to Citation of Data (EPA Form 85720-34)

5) Data Matrix (EPA Form 8570-35)

6) Five Copies of Draft Labeling for the Subject Product

7) Volume 1: CYTOKIN® BIOREGULATOR CONCENTATE. Biochemical Pesticide Product Chemistry Data in Support of FIFRA Registration. Data Requirement: 40 CFR 158.2030: OPPTS Series 830 and 880; Project Number: Cytokin® Bioregulator Concentrate – Cyto-Volume 1.

The product chemistry data for the subject product was developed on behalf of Miller Chemical & Fertilizer, LLC.

Sincerely,

N. Bhushan Mandava, Ph.D., RAC
Agent for Miller Chemical & Fertilizer, LLC

Enclosure

TRANSMITTAL DOCUMENT

NAME AND ADDRESS OF SUBMITTER:

Miller Chemical & Fertilizer, LLC
c/o Mandava Associates, LLC
1050 Connecticut Avenue, Suite 1000
Washington, DC 20036

REGULATORY ACTION SUPPORTED BY THIS PACKAGE:

FIFRA Registration Application for:

Product Name:	Cytokin® Bioregulator Concentrate
Active Ingredient:	Mixed Cytokinins as Kinetin
Company Name:	Miller Chemical & Fertilizer, LLC
EPA Company Number:	90930
EPA File Symbol:	Not Assigned

TRANSMITTAL DATE:

May 14, 2015

LIST OF SUBMITTED STUDIES:

1) Volume 1: CYTOKIN® BIOREGULATOR CONCENTATE. Biochemical Pesticide Product Chemistry Data in Support of FIFRA Registration. Data Requirement: 40 CFR 158.2030: OPPTS Series 830 and 880; Project Number: Cytokin® Bioregulator Concentrate – Cyto-Volume 1.

COMPANY OFFICIAL

N. Bhushan Mandava, Ph.D., RAC
Agent for Miller Chemical & Fertilizer, LLC

COMPANY CONTACT:
N. Bhushan Mandava, Ph.D.
Mandava Associates, LLC
1050 Connecticut Avenue, Suite 1000
Washington, D.C. 20036
Tel : (202) 223-1424/1747
Fax : (202) 223-0141

Form Approved OMB No. 2070-0060

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
WASHINGTON, D.C. 20460

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Do not send the completed form to this address.

Certification with Respect to Citation of Data

Applicant's/Registrant's Name, Address, and Telephone Number Miller Chemical & Fertilizer, LLC, 120 Radio Road, Hanover, PA 17331, (717) 632-8921	EPA Registration Number/File Symbol 90930-
Active Ingredient(s) and/or representative test compound(s) Mixed Cytokinins as Kinetin (CAS# 525-79-1)	Date May 14, 2015
General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158) Plant Growth Regulator, Terrestrial, Food and Non-food Crops	Product Name Cytokinin® Bioregulator Concentrate

NOTE: If your product is a 100% repackaging of another purchased EPA-registered product labeled for all the same uses on your label, you do not need to submit this form. You must submit the Formulator's Exemption Statement (EPA Form 8570-27).

☐ I am responding to a Data-Call-In Notice, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

SECTION I: METHOD OF DATA SUPPORT (Check one method only)

☐ I am using the cite-all method of support, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

☑ I am using the selective method of support (or cite-all option under the selective method), and have included with this form a completed list of data requirements (the Data Matrix form must be used).

SECTION II: GENERAL OFFER TO PAY

[Required if using the cite-all method or when using the cite-all option under the selective method to satisfy one or more data requirements]

☑ I hereby offer and agree to pay compensation, to other persons, with regard to the approval of this application, to the extent required by FIFRA.

SECTION III: CERTIFICATION

I certify that this application for registration, this form for reregistration, or this Data-Call-In response is supported by all data submitted or cited in the application for registration, the form for reregistration, or the Data-Call-In response. In addition, if the cite-all option or cite-all option under the selective method is indicated in Section I, this application is supported by all data in the Agency's files that (1) concern the properties or effects of this product or an identical or substantially similar product, or one or more of the ingredients in this product; and (2) is a type of data that would be required to be submitted under the data requirements in effect on the date of approval of this application if the application sought the initial registration of a product of identical or similar composition and uses .

I certify that for each exclusive use study cited in support of this registration or reregistration, that I am the original data submitter or that I have obtained the written permission of the original data submitter to cite that study.

I certify that for each study cited in support of this registration or reregistration that is not an exclusive use study, either: (a) I am the original data submitter; (b) I have obtained the permission of the original data submitter to use the study in support of this application; (c) all periods of eligibility for compensation have expired for the study; (d) the study is in the public literature; or (e) I have notified in writing the company that submitted the study and have offered (I) to pay compensation to the extent required by sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA; and (ii) to commence negotiations to determine the amount and terms of compensation, if any, to be paid for the use of the study.

I certify that in all instances where an offer of compensation is required, copies of all offers to pay compensation and evidence of their delivery in accordance with sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA are available and will be submitted to the Agency upon request. Should I fail to produce such evidence to the Agency upon request, I understand that the Agency may initiate action to deny, cancel or suspend the registration of my product in conformity with FIFRA.

I certify that the statements I have made on this form and all attachments to it are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

Signature	Date	Typed or Printed Name and Title
N. Bhushan Mandava	May 14, 2015	N. Bhushan Mandava, Agent for Miller Chemical & Fertilizer, LLC

EPA Form 8570-34 (9-97) Electronic and Paper versions available. Submit only Paper version.

Form Approved OMB No. 2070-0060

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
WASHINGTON, D.C. 20460

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DATA MATRIX

Date May 13, 2015			EPA Reg No./File Symbol 90930-		Page 1 of 8
Applicant's/Registrant's Name & Address Miller Chemical & Fertilizer, LLC 120 Radio Road Hanover, PA 17331			Product Cytokin Bioregulator Concentrate		
Ingredient Cytokinin (as kinetin) (CAS # 525-79-1)					
Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
880.1100	Product Identity and Composition		Miller Chemical & Fertilizer, LLC	OWN	
			120 Radio Road, Hanover, PA 17331		
880.1200	Description of Starting Materials, Production and		Miller Chemical & Fertilizer, LLC	OWN	
	Formulation Process		Miller Chemical & Fertilizer, LLC	OWN	
880.1400	Discussion of Formation of Impurities		Miller Chemical & Fertilizer, LLC	OWN	
830.1700	Preliminary Analysis		Miller Chemical & Fertilizer, LLC	OWN	
830.1750	Certified Limits		Miller Chemical & Fertilizer, LLC	OWN	
830.1800	Enforcement Analytical Method		Miller Chemical & Fertilizer, LLC	OWN	
830.6302	Color		Miller Chemical & Fertilizer, LLC	OWN	
830.6303	Physical State		Miller Chemical & Fertilizer, LLC	OWN	
830.6304	Odor		Miller Chemical & Fertilizer, LLC	OWN	
830.6313	Stability to Normal & Elevated Temperatures, Metals		Miller Chemical & Fertilizer, LLC		Not Required
	and Metal Ions				
830.6314	Oxidation/Reduction: Chemical Incompatibility		Miller Chemical & Fertilizer, LLC		Not Required
Signature			Name and Title N. Bhushan Mandava, Ph.D., Agent for Miller Chemical & Fertilizer, LLC		Date May 13, 2015

EPA Form 8570-35 (9-97) Electronic and Paper versions available. Submit only Paper version.

Agency Internal Use Copy

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WASHINGTON, D.C. 20460

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DATA MATRIX

Date May 13, 2015	EPA Reg No./File Symbol 90930-	Page 2 of 8
Applicant's/Registrant's Name & Address Miller Chemical & Fertilizer, LLC 120 Radio Road Hanover, PA 17331	Product Cytokin Bioregulator Concentrate	

Ingredient Cytokinin (as kinetin) (CAS # 525-79-1)

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.6315	Flammability		Miller Chemical & Fertilizer, LLC		Not Required
830.6316	Explodability		Miller Chemical & Fertilizer, LLC		Not Required
830.6317	Storage Stability		Miller Chemical & Fertilizer, LLC		Not Required
830.6319	Miscibility		Miller Chemical & Fertilizer, LLC	OWN	
830.6320	Corrosion Characteristics		Miller Chemical & Fertilizer, LLC		Not Required
830.6321	Dielectric Breakdown Voltage		Miller Chemical & Fertilizer, LLC		Not Required
830.7000	pH		Miller Chemical & Fertilizer, LLC	OWN	
830.7050	UV/Visible Absorption		Miller Chemical & Fertilizer, LLC		Not Required
830.7100	Viscosity		Miller Chemical & Fertilizer, LLC	OWN	
830.7200	Melting Point/Melting Range		Miller Chemical & Fertilizer, LLC		Not Required
830.7220	Boiling Point/Boiling Range		Miller Chemical & Fertilizer, LLC		Not Required
830.7300	Density/Relative Density/Bulk Density		Miller Chemical & Fertilizer, LLC	OWN	
830.7370	Dissociation Constants in Water		Miller Chemical & Fertilizer, LLC		Not Required
830.7550	Partition Coefficient (n-octanol/water), Shake Flask		Miller Chemical & Fertilizer, LLC		Not Required
	Metho				

Signature	Name and Title	Date
N. B. Mandava	N. Bhushan Mandava, Ph.D., Agent for Miller Chemical & Fertilizer, LLC	May 13, 2015

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DATA MATRIX

Date May 13, 2015	EPA Reg No./File Symbol 90930-	Page 3 of 8
Applicant's/Registrant's Name & Address Miller Chemical & Fertilizer, LLC 120 Radio Road Hanover, PA 17331	Product Cytokin Bioregulator Concentrate	

Ingredient Cytokinin (as kinetin) (CAS # 525-79-1)

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.7560 (63-11)	Partition Coefficient (n-octanol/water),		Miller Chemical & Fertilizer, LLC		Not Required
	Generator Column Method				
830.7570 (63-11)	Partition Coefficient (n-octanol/water),		Miller Chemical & Fertilizer, LLC		Not Required
	Estimation by Liquid Chromatography				
830.7840 (63-8)	Water Solubility: Column Elution Method;		Miller Chemical & Fertilizer, LLC	OWN	
	Shake Flask Method				
830.7860 (63-8)	Water Solubility, Generator Column Method		Miller Chemical & Fertilizer, LLC		Not Required
830.7950 (63-9)	Vapor Pressure		Miller Chemical & Fertilizer, LLC		Not Required
870.1100 (81-1)	Acute Oral Toxicity			PAY	
870.1200 (81-2)	Acute Dermal Toxicity			PAY	
870.1300 (81-3)	Acute Inhalational Toxicity			PAY	
870.2400 (81-4)	Acute Eye Irritation			PAY	
870.2500 (81-5)	Acute Dermal Toxicity			PAY	
870.2600 (81-6)	Skin Sensitization			PAY	

Signature	Name and Title	Date
	N. Bhushan Mandava, Ph.D., Agent for Miller Chemical & Fertilizer, LLC	May 13, 2015

Form Approved OMB No. 2070-0060

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DATA MATRIX

Date May 13, 2015	EPA Reg No./File Symbol 90930-	Page 4 of 8
Applicant's/Registrant's Name & Address Miller Chemical & Fertilizer, LLC 120 Radio Road Hanover, PA 17331	Product Cytokin Bioregulator Concentrate	

Ingredient Cytokinin (as kinetin) (CAS # 525-79-1)

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
CITE-ALL			Macdermid Agricultural Solutions, Inc.	Pay	
			245 Freight Street		
			Waterbury, CT 06702 (Company # 400)		
			Winfield Solutions, LLC	Pay	
			P.O. Box 64589		
			St. Paul, MN 55164 (Company # 1381)		
			Helena Chemical Co	Pay	
			7664 Smythe Farm Road		
			Memphis, TN 38120 (Company # 5905)		
			Loveland Products, Inc.	Pay	
			P.O. Box 1286		
			Greeley, CO 80632 (Company # 34704)		
			Atlantic & Pacific Inc.	Pay	
			P.O. Box 1336		
			Hendersonville, NC 28793 (Company # 35980)		

Signature	Name and Title	Date
	N. Bhushan Mandava, Ph.D., Agent for Miller Chemical & Fertilizer, LLC	May 13, 2015

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DATA MATRIX

Date May 13, 2015	EPA Reg No./File Symbol 90930-	Page 5 of 8
Applicant's/Registrant's Name & Address Miller Chemical & Fertilizer, LLC 120 Radio Road Hanover, PA 17331	Product Cytokin Bioregulator Concentrate	

Ingredient Cytokinin (as kinetin) (CAS # 525-79-1)

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
CITE-ALL			Westbridge Agricultural Products	Pay	
			12733 Director's Loop		
			Woodbridge, VA 22192 (Company # 51517)		
			Stoller Enterprises, Inc.	Pay	
			4001 W. Sam Houston Pkwy N., Suite 100		
			Houston, TX 77043 (company # 57538)		
			Fine Agrochemicals, LTD	Pay	
			12733 Director's Loop		
			Woodbridge, VA 22192 (Company # 62097)		
			Grupo Bioquimico Mexicano S.A. DE C.V.	Pay	
			1101 17th Street, NW, Suite 500		
			Washington, DC 20036 (Company # 62762)		
			Arysta Lifesciences North America, LLC	Pay	
			15401 Weston Parkway, Suite 150		
			Cary, NC 27513 (Company # 66330)		

Signature	Name and Title	Date
	N. Bhushan Mandava, Ph.D., Agent for Miller Chemical & Fertilizer, LLC	May 13, 2015

Form Approved OMB No. 2070-0060

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
WASHINGTON, D.C. 20460

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DATA MATRIX

Date May 13, 2015	EPA Reg No./File Symbol 90930-	Page 6 of 8
Applicant's/Registrant's Name & Address Miller Chemical & Fertilizer, LLC 120 Radio Road Hanover, PA 17331	Product Cytokin Bioregulator Concentrate	

Ingredient Cytokinin (as kinetin) (CAS # 525-79-1)

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
CITE-ALL			Spray Drift Task Force	Pay	
			1900 K Street, NW		
			Washington, DC 20006 (Company # 66607)		
			Outdoor Residential Exposure Task Force	Pay	
			1350 I Street, N.W.		
			Washington, DC 20005 (Company # 71754)		
			Agricultural Reentry Task Force	Pay	
			1350 I Street, N.W.		
			Washington, DC 20005 (Company # 71755)		
			LT Biosyn, Inc.	Pay	
			4802 Murrieta Street		
			Chino, CA 91710 (Company # 72639)		
			Residential Exposure Joint Venture	Pay	
			1667 K Street, NW, Suite 300		
			Washington, DC 20006 (Company # 74888)		

Signature	Name and Title	Date
N Bhushan Mandava	N. Bhushan Mandava, Ph.D., Agent for Miller Chemical & Fertilizer, LLC	May 13, 2015

Form Approved OMB No. 2070-0060

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
401 M Street, S.W.
WASHINGTON, D.C. 20460

Paperwork Reduction Act Notice: The public reporting burden for this collection of information is estimated to average 0.25 hours per response for registration activities and 0.25 hours per response for reregistration and special review activities, including time for reading the instructions and completing the necessary forms. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Director, OPPE Information Management Division (2137), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460. Do not send the form to this address.

DATA MATRIX

Date May 13, 2015	EPA Reg No./File Symbol 90930-	Page 7 of 8
Applicant's/Registrant's Name & Address Miller Chemical & Fertilizer, LLC 120 Radio Road Hanover, PA 17331	Product Cytokin Bioregulator Concentrate	

Ingredient Cytokinin (as kinetin) (CAS # 525-79-1)

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
CITE-ALL			Agricultural Handler Exposure Task Force	Pay	
			P.O. Box 509		
			1720 Prospect Drive (Company # 75234)		
			Technaflora Plant Products LTD.	Pay	
			1001 G Street, NW, Suite 500 West		
			Washington DC 2001 (Company # 75851)		
			Cytotek Enterprises, Inc.	Pay	
			4110 136th St. NW		
			Gig Harbor, WA 98332 (Company # 80518)		
			K & W Agrichemicals, Inc.	Pay	
			Wagner Regulatory Associates, Inc.		
			P.O. Box 640 (Company # 82437)		
			Custom Liquid Solutions, LLC	Pay	
			427 Hide Away Circle		
			Cub Run, KY 42729 (Company # 87193)		

Signature	Name and Title	Date
N. Bhushan Mandava	N. Bhushan Mandava, Ph.D., Agent for Miller Chemical & Fertilizer, LLC	May 13, 2015

Form Approved OMB No. 2070-0060

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DATA MATRIX

Date May 13, 2015	EPA Reg No./File Symbol 90930-	Page 8 of 8
Applicant's/Registrant's Name & Address Miller Chemical & Fertilizer, LLC 120 Radio Road Hanover, PA 17331	Product Cytokin Bioregulator Concentrate	

Ingredient Cytokinin (as kinetin) (CAS # 525-79-1)

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
CITE-ALL			Syngenta Crop Protection, LLC	Pay	
			P.O. Box 18300		
			Greensboro, NC 27419 (Company # 100)		

Signature	Name and Title	Date
N B Mandava	N. Bhushan Mandava, Ph.D., Agent for Miller Chemical & Fertilizer, LLC	May 13, 2015

CYTOKIN® BIOREGULATOR CONCENTRATE

ACTIVE INGREDIENTS:

Cytokinin, as kinetin, based on biological activity.....0.01%

Includes:

6-(4-hydroxy-3-methylbut-*trans*-2-enylamino)-purine

N^6-methylaminopurine,

N^6-dimethylaminopurine,

N^6-isopentenylaminopurine

INERT INGREDIENTS.....**99.99%**

TOTAL.....100.00%

CAUTION

KEEP OUT OF REACH OF CHILDREN

Si usted no entiende la etiqueta, busque a alguien pare que se la explique a usted en detalle.
(if you do not understand the label, find someone to explain it to you in detail)

FIRST AID	
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If Inhaled	• Move person to fresh air. • If person not breathing, call 911 or an ambulance then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call poison control center or doctor for further treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call poison control center or doctor for treatment advice.
Have a product container or label with you when calling a poison control center or doctor, or going for treatment. You may also call 1-800-222-1212 for emergency medical treatment information.	

For chemical emergency: spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300

Manufactured for:
Miller Chemical & Fertilizer, LLC
P.O. Box 333, 120 Radio Road
Hanover, PA 17331

NET CONTENTS:

EPA Reg. No. 90930- EPA Est. No.

Batch Code:_____

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear long-sleeved shirt and long pants and shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining personal protective equipment. If no such instructions for washables, use detergent and hot water. Keep and wash personal protective equipment separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR part 170.240(d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not contaminate water when disposing of equipment washwater or rinsate.

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Before using Cytokin® Bioregulator Concentrate, read and follow the precautions appearing on the label.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State of Tribal agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170.

This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), notification to workers and restricted-entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, waterproof gloves and shoes plus socks.

NON-AGRICULTURE USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Reentry Statement: Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treated area until spray has dried.

Chemigation system

Apply Cytokin® Bioregulator Concentrate only through the following types of systems: sprinkler, including center pivot, lateral move, end tow, side roll, traveler, big gun, solid set, or hand move; or drip (trickle) irrigation systems. Do not apply this product through any other type of system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable about the chemigation systems and responsible for its operation, or under supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone (RPZ), back flow preventer or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction.

There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid- operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Sprinkler Chemigation: The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

The pesticide injection system must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when speeds favor drift beyond area intended for treatment.

Supply pesticide tank agitation, especially if product is to sit in tank for over 6 hours.

Apply Cytokin® Bioregulator Concentrate continuously for the duration of water application or with the first quarter to one-half of the watering period.

Mixing instructions: Fill supply tank to 1/4 to 1/2 full. Add Cytokin® Bioregulator Concentrate and complete filling.

Cytokin® Bioregulator Concentrate
General Information

Cytokin® Bioregulator Concentrate is a plant growth regulator product containing cytokinin plant hormone formulated to improve nutrient utilization, promote bud initiation and development, flower set and retention, improve fruit size, and increase efficiency of production.

Use Cytokin® Bioregulator Concentrate in combination with a well-balanced fertility program and good management practices. The Company recommends the use of soil and tissue testing, and additional nutrients and micronutrients as needed. For maximum benefit, add 0.1 to 0.25 lbs. Calcium to spray solution with a complete fertilizer, such as Nutrileaf (20-20-20) or Sol-U-Gro® (12-48-8) along with chelated micronutrients.

A blanket exemption from the requirement of a tolerance has been issued by the U.S. EPA for the active ingredient in this product. This product is cleared for use on any and all crops.

APPLICATION INSTRUCTIONS

SHAKE WELL BEFORE USING

Good growing conditions are necessary for the maximum utilization of Cytokin® Bioregulator Concentrate. For maximum gain from the application of this product always use a well-balanced plant nutrient program. This product, in any of its applications, is not intended to replace fertilizer or to supply nutrients that would normally be added in a conventional fertility program. Timing of the foliar spray application is very important. Always follow directions precisely. Do not apply when temperatures are above 95°F (36°C) or within eight hours of forecast rain.
For General Use, mix 1 oz. Cytokin® Bioregulator Concentrate with 4 gallons water and spray plant foliage to dampness, almost to runoff. Apply this product in the morning or late afternoon.
For larger areas where aircraft or power driven sprayers are used to apply the spray, follow the specific use rates below. Apply with sufficient water to get thorough foliage coverage, 3 to 10 gallons water per acre for aircraft sprayers and 10 to 100 gallons water per acre for ground driven spray equipment. It is acceptable to use Cytokin® Bioregulator Concentrate with a surfactant. This product can be applied as a mixture with most pesticides. Always run a "jar compatibility test" and treat a small area with any new mixture to test the chemical and crop reaction before large field application.
For transplanting: Drench soil around each plant with a mixture of 1 fl. oz. Cytokin® Bioregulator Concentrate in 4 gallons of water or transplant solution. Spray seedlings with a solution of 1 fl. oz. this product in 4 gallons of water or ½ to one pint per acre 2 to 4 weeks after transplanting and follow with subsequent sprays at instructed intervals throughout the growing season.
Chemigation application: Dilute 1 part Cytokin® Bioregulator Concentrate with at least 5 parts water before adding to the supply tank. Ensure continuous agitation of supply tank during application or injection into the chemigation system. When applying this product through a drip system, apply this product with the first ¼ inch equivalent water. In sprinkler systems, apply this product over the watering cycle.

CROP USE GUIDELINES

For local use recommendations for major and minor crops, contact your PCA or local distributor representative.

Include Calcium EDTA or other highly available calcium source in the tank mix of all foliar applications.

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Asparagus	16 fl. oz.	Spray Cytokin® Bioregulator Concentrate to fern about 2 weeks after last harvest and repeat monthly during fern growth.
Beans – fresh: Edible, green, etc. And peas	8 fl. oz.	First: apply at the 2 to 3 trifoliate leaf stage. Second: 7 to 15 days later.
Beans and peas – dry	8 fl. oz.	Apply when plants have developed 3 to 7 trifoliate leaves, again at early bloom, and again at the beginning of pod fill.
Beets, Sugar	8 to 16 fl. oz. 16 fl. oz. 16 fl. oz.	First application: Apply at the beginning of root enlargement. Second: Apply at beginning of sugar accumulation Final: Apply 4 to 6 weeks before harvest
Broccoli, Cabbage, Cauliflower, Celery, Lettuce	8 fl. oz.	Make 4 to 6 applications at two week intervals beginning at the 3 leaf stage. Applications can be divided to provide weekly applications of 2 to 4 fl. oz./acre applied with other spray or mixtures of insecticides or foliar nutrients.
Carrot and Other root crops	16 fl. oz.	Apply when seedlings have 3 to 6 leaves. Cytokin® Bioregulator Concentrate can be applied with herbicides.
Corn (field)	8 fl. oz.	Apply to prolific (multiple ear) varieties only. Make first application at the 8 to 10 leaf stage. Follow with second application at tasseling.
Corn (sweet and popcorn)	8 fl. oz.	Apply at the 5 to 7 leaf stage. Follow with second application at tasseling.
Cotton	2 to 4 fl. oz. OR 8 fl. oz.	Pinhead square: Apply weekly for 4 weeks. Adjust For band width; OR First Bloom: Apply at first white flower and again two weeks later (mid bloom)

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Cucumber	4 to 32 fl. oz.	Broadcast spray application: To promote early female vigor and enhance yields, apply at the 3 to 6 leaf stage and continue at weekly to 14 day intervals for four applications. Begin banded rates at the 3 to 6 leaf stage at the rate of 4 to 6 fl. oz. for the first application.
Forage crops - legumes or grasses	8 to 16 fl. oz.	Spray Cytokin® Bioregulator Concentrate 4 to 6 weeks after emergence and monthly thereafter. Mature Crop: Spray this product as spring growth begins, 1 week before harvest and again 2 weeks after cutting.
Seed Production	8 to 16 fl. oz.	On established crops: spray Cytokin® Bioregulator Concentrate beginning of inflorescence development (early tillering) and again 2 weeks later. Spray 8 to 16 fl. oz./acre at the beginning of bloom.
Grapes	4 to 16 fl. oz.	General: Cytokin® Bioregulator Concentrate at 4 fl. oz. with foliar nutritional or pesticidal sprays. Sizing: Apply as a tank mix with all Gibberellic Acid sizing sprays. Harvest: Apply this product with high potash fertilizer at 2 to 12 days before harvest to enhance sugar accumulation.
Melons (Cantaloupe, Muskmelon, Watermelon)	4 to 32 fl. oz.	Broadcast spray applications: To promote early female vigor and enhance early yields, apply at the 3 to 6 leaf stage and continue at weekly to 14 day intervals for four applications. To promote sugar development during cool growing conditions and enhance size of melons apply, Cytokin® Bioregulator Concentrate beginning at bloom and continue at weekly to 14 day intervals until 3 weeks before final harvest. Begin banded rates at the 3 to 6 leaf stage at the 4 fl. oz. rate for the first application. To enhance sugar accumulation, spray up to 16 fl. oz./acre at 2 to 10 days before harvest.

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Nut crops Almonds, Pecans, Walnuts, Pistachios, Filberts, Cashews	8 to 32 fl. oz.	Apply Cytokin® Bioregulator Concentrate with 10 lb./acre low-biuret urea at mid-nut fill and again one month later. Add 8 oz. of this product per acre to each zinc or calcium spray. Apply 16 to 32 oz. prior to flowering. Ask your local PCA for specific regional timing.
Onions, Garlic	8 fl. oz.	Spray fall seeded onions in spring at bulb initiation and at weekly to 2 week intervals for 3 to 4 applications. Transplants: see transplant instructions. Spray transplants at bulb initiation (2 to 4 new blades) and again weekly for up to 4 applications.
Peanuts	8 fl. oz.	Apply at the 3rd trifoliate. Repeat at 10 day intervals for four applications.
Peppers (Bell), Pepper (Chiles), Eggplant, Okra	8 fl. oz.	Apply at the 3 to 4 leaf stage. Follow with applications at 7 to 14 day intervals for a total of four to six applications.
Potatoes	Seed Treatment	Dip potato pieces in a solution of 1 part Cytokin® Bioregulator Concentrate to 400 parts water for 20 to 60 seconds. This product can be used with a fungicide treatment. Follow with foliar spray program.
Potatoes (Foliar)	8 fl. oz.	Spray at tuber initiation (about 2-4 weeks after emergence) and again two weeks later.
Rice	8 fl. oz.	Spray at the 3 to 7 leaf stage to increase tillers and panicles or at the PI/PD stage to reduce straight heads and increase panicle size.
Sorghum (Milo)	8 fl. oz.	Apply single spray at the 4 to 7 leaf stage.
Soybeans	8 fl. oz.	Apply during the 3 to 5 trifoliate stage, and each of the R1 and R5 stages.
Spinach and leafy greens	8 fl. oz.	Make 4 to 6 applications at two week intervals beginning at the 3 leaf stage. Applications can be divided to provide weekly application of 4 fl. oz./acre applied with other spray mixtures of insecticide or foliar nutrients.

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Squash: Summer, Winter, Zucchini	4 to 32 fl. oz.	Broadcast spray applications: To promote early Summer, Winter female vigor and enhance yields, apply at the 3 to 6 zucchini leaf stage and continue at weekly to 14 day intervals until 2 weeks before final harvest. Begin banded applications at the 3 to 6 leaf stage at the 4 fl. oz. rate for the first application.
Strawberries	8 to 16 fl. oz.	Transplants: See transplant instructions. Begin spray applications at 1 to 2 weeks after transplanting and continue at 7 to 14 day intervals through the production season.
Sugarcane	16 fl. oz. 32 fl. oz.	First: At beginning of ratoon bud extension. Second: One month after ratoon growth begins. Final: 4 to 6 weeks before harvest.
Tomatoes Fresh Market, Okra	8 fl. oz.	Spray Cytokin® Bioregulator Concentrate at the 6 to 8 leaf stage. Follow with 7 to 14 day applications to promote set and continue production. Make final application about 3 to 4 weeks before final harvest.
Tomatoes (processing)	8 fl. oz.	Apply Cytokin® Bioregulator Concentrate at the beginning of bloom. Make subsequent applications at 2 to 4 week intervals until 3-4 weeks before harvest.
Spring wheat, Barley, Rye and Oats	8 fl. oz.	Apply when plants have 3 to 5 true leaves emerged.
Winter Wheat, Barley and Rye	8 fl. oz.	Spray in the spring after the plants break dormancy but before jointing.
Yams Sweet potatoes	8 to 16 fl. oz.	Dip transplants in a solution of one part Cytokin® Bioregulator Concentrate to 4 parts water. Spray foliage at 2 and 4 weeks after transplanting.
All other crops	8 to 32 fl. oz.	Contact your local PCA or Distributor representative for specific crop uses.

ALL Fruits: Apple, Cherry, Citrus (Orange, Lemon, etc.), Banana, Stone fruit (Peach, Plum, etc.), Pear, Mango, Papaya, Pineapple

Transplants: Follow general transplant instructions.

Fruit trees in production: Spray fruit trees with a solution of 1 fl. oz. Cytokin® Bioregulator Concentrate in 4 gallons of water (or 1 to 2 pints this product/acre) at the following growth stages:

1. At bud break to increase pollination efficiency. (This product will not harm bees or pollinating insects);
2. At 1 week after petal fall to promote cell division;
3. At 1 to 2 weeks before fruit drop to reduce physiological stress and reduce fruit drop;
4. At 20 to 30 days after petal fall to increase fruit size.
5. Monthly during fruit growth and development to promote nutrient translocation to produce larger and better quality fruit.

Apply this product with foliar nutrients, micronutrients or secondary nutrient sprays such as calcium, iron, and zinc.

GRAPES (Table and Wine)

Spray with a solution of 4 to 16 ounces Cytokin® Bioregulator Concentrate per acre at the following growing stages:

First: Apply at the 12 to 18 inch cane stage to increase bunch size and length, and to support the flowers on the cluster.

Second: Apply during bloom to improve berry set.

Third: Apply during berry set to promote berry development.

Fourth: Apply 4 weeks before harvest to promote sugar accumulation and storage.

A light amount of an appropriate foliar calcium, such as Miller Cell Force®, should be applied with the above applications of this product on grapes. Apply foliar potash (crop finisher), such as Miller Sugar Express® 4-10-40 or Miller Crop Finisher® 4-2-41 with the fourth application to increase sugar storage.

When using foliar nutrients with this product, use materials and application timings that have shown they will not damage the vines or the berries.

Hydroponic Operations

Including but not limited to Vegetables, Herbs and Spices. In substrate culture systems, apply Cytokin® Bioregulator Concentrate continuously with each fertigation cycle. In closed systems, this product should be reapplied every 7 to 14 days. Recommended rates of 0.2 to 0.4 fluid ounces per 100 gallons of water.

Nursery and Greenhouse Use

To promote bud differentiation, cell division, root induction and growth and to reduce apical dominance. Use Cytokin® Bioregulator Concentrate in your watering program or as a foliar spray.

Propagation of Cuttings: Dip cuttings in rooting hormone powder or solution and stick in rooting medium. Spray or mist cuttings with a solution of 2 fl. oz. Cytokin® Bioregulator Concentrate to 4 gallons water (2 qt./100 gallons) at weekly intervals until root buds initiate. Then spray at 2 to 4 week intervals.

Transplanting: Add 2 fl. oz. Cytokin® Bioregulator Concentrate per 4 gallons of transplant solution (fertilizer-water). Drench root zone. Follow with spray to foliage or add through irrigation system at 2 to 4 week intervals at the rate of 2 quarts per 100 gallons.

Production: To increase growth rate, improve quality and resilience of nursery and greenhouse crops, add 2 fl. oz. Cytokin® Bioregulator Concentrate per 4 gallons (2 quart/100 gallons) of fertilizer or water solution and apply through the irrigation system or via foliar spray.

Nutritional Deficiencies: To promote rapid uptake and correction of nutrient deficiencies in ornamentals and turf, add Cytokin® Bioregulator Concentrate to Iron, Nitrogen fertilizers, zinc or other nutrient solutions at the rate of 2 fl. oz. per 4 gallons (2 qt./128 gallons). Apply as foliar or soil drench.

TURF

Spring application: Make an early application of 1 to 2 fl. oz. Cytokin® Bioregulator Concentrate per 1000 sq. ft. to promote tiller, rhizome or stolon growth, to develop a deep root system, and to give the turf a rapid start once winter dormancy is broken and growth begins. Continue monthly 2 fl. oz./1000 sq. ft. applications throughout spring and summer. Spring application is important to develop a deep root system which will condition the turf and reduce the stress of disease and summer heat or low rainfall. Apply this product with iron sulfate for maximum root growth response.

Fall Application: Two to three applications of Cytokin® Bioregulator Concentrate (1 to 2 fl. oz. per 1000 sq. ft.) should be made in the fall beginning about eight weeks before turf becomes dormant (eight weeks before first frost date in the northern states) to promote root growth and provide grass with the vigor to better endure the stress of winter (reduce winter kill) and improve survival of a good healthy turf for the following spring.

Golf Greens, Fairways, Football and Soccer Fields and Baseball Infields and outfields: At the beginning of spring growth apply 2 to 4 fl. oz. per 1000 square feet at the breaking of dormancy. Make successive maintenance applications of 1 to 2 fl. oz. per 1000 sq. ft. at monthly intervals or as needed to maintain root growth, tillering, appearance and vigor throughout the growing season. During periods of intense use apply 1 to 2 fl. oz. per 1000 sq. feet weekly to the greens, infield or playing field to maintain root structure and renew growth and vigor between games. Make three applications of 1 fl. oz. per 1000 sq. ft. at 2 week intervals in the fall beginning about eight (8) weeks before turf becomes dormant to promote root growth and increase winter stamina to reduce winter kill.

Sod: Spray Cytokin® Bioregulator Concentrate to newly laid sod at 1 to 2 fl. oz. per 1000 sq. ft. to promote rooting and increase the rate of sod establishment. Maintain growth and vigor with monthly applications of 1 to 2 fl. oz. per 1000 square feet.

Sod Farming: Spray Cytokin® Bioregulator Concentrate at 1 to 2 pints/acre monthly to sod fields to promote root, tiller and rhizome growth and to bring the crop to harvest more quickly. Maintain accelerated growth with this product at 1 to 2 pints per acre at 2 to 4 week intervals or as needed. Spray this product at 1 to 2 pints per acre to sod 1 to 4 days before harvesting to initiate new root growth and speed up establishment when sod is laid.

Lawns, Playgrounds, Parks, Recreational Areas, Landscaped Roadways and Cemeteries: Apply 2 fl. oz. per 1000 square feet at the beginning of spring growth to promote a deep root system and tillering to fill sparse areas. Apply 1 to 2 fl. oz. per 1000 square feet monthly to maintain health and vigor of the turf. Application can be made more frequently as needed to condition the turf for stress or for periods of heavy use.

Nutritional sprays: For better color response from nitrogen, iron, sulfur, zinc and other nutrient sprays use 1 to 2 pt. Cytokin® Bioregulator Concentrate per acre with nutrient spray solution. For greens or smaller area, add 1 to 2 fl. oz. Cytokin® Bioregulator Concentrate per 3 to 5 gallons spray solution.

Established Trees and Shrubs: Spray 2 to 4 pints per acre, or a mixture of 2 oz. Cytokin® Bioregulator Concentrate to 4 gallons water to thoroughly wet the foliage at any or all of the following growth stages:

1. Early spring to promote bud initiation;
2. At bud break;
3. At terminal calyx;
4. Early to mid-fall.

For best results apply this product with foliar nutrients, micronutrients or secondary nutrient sprays such as calcium, iron, and zinc.

LANDSCAPE MANAGEMENT (see Turf uses also)
Bedding Plants: Spray bedding plants at 2 to 4 week intervals with a solution of 2 fl. oz. Cytokin® Bioregulator Concentrate per 4 gallons water (2 quart per 128 gallons), fungicide or nutrient spray to promote growth, flowering and maximum color development.

Lawn Care: Spray Cytokin® Bioregulator Concentrate to lawns at the rate of 1 fl. oz. per 1000 sq. ft. This product can be added to liquid fertilizer, insecticide, fungicide, or herbicide sprays.

Transplanting of trees, shrubs or bedding plants: See transplanting instructions under nursery use.

Maintenance: To promote growth and reduce stress from drought, disease or nutrient deficiency. Spray Cytokin® Bioregulator Concentrate to foliage at the rate of 2 fl. oz. per 4 gallons of water or fertilizer or pesticide solution (2 quart per 128 gallons).

Nutritional Deficiencies: To promote rapid uptake and correction of nutrient deficiencies in ornamentals and turf, add Cytokin® Bioregulator Concentrate to iron, nitrogen fertilizers, zinc or other nutrient spray solutions at the rate of 2 fl. oz. per 4 gallons (2 qt./128 gallons). Apply as a foliar spray or soil drench.

Root Feeding: Mix Cytokin® Bioregulator Concentrate with root feeding solutions at the rate of 2 fl. oz. per 4 gallons of nutrient solution (2 quart per 128 gallons)

Non-Bearing Use for TREES, FRUITS, NUTS, BERRIES, SHRUBS AND WOODY ORNAMENTALS:
To aid in propagation of trees, fruits, berries, soft wood cuttings, shrubs and woody ornamentals and to reduce transplant shock, to promote growth and vigor and reduce stress in non-bearing fruit trees such as apple, peach; berry and vine crops such as cranberries; evergreen trees such as spruce, fir, pine; deciduous trees such as birch, elm, maple; flowering plants and shrubs such as poinsettia, rose, azalea, rhododendron, crepe myrtle; and for other flowering and non-flowering shrubs.

New cuttings: Spray Cytokin® Bioregulator Concentrate at 1 to 2 pints per acre on the stems, branches, vines or canes to be propagated from 1 to 7 days before cutting. After planting, spray this product at ½ to 1 pint or apply though the irrigation system at weekly intervals until the plants are established.

Replant areas: Spray the plants before cutting. Then spray Cytokin® Bioregulator Concentrate weekly at ½ to 1 fluid ounce per 1500 square feet and irrigate in. Continue weekly to biweekly applications until plants are established.

Established Trees and Shrubs: Spray 1 to 2 pint Cytokin® Bioregulator Concentrate per acre, or a mixture of 1 fl. oz. of this product to 4 gallons water to thoroughly wet the foliage at any or all of the following growth stages:

1. Early spring to promote bud initiation;
2. At bud break;
3. At terminal calyx;
4. Early to mid-fall.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage

Pesticide Storage: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of reach of children, preferably in locked storage area.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILTY

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials, resistant strains or other influencing factors in the use of the product, which are beyond the control of MILLER CHEMICAL & FERTILIZER, LLC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold MILLER CHEMICAL & FERTILIZER, LLC and Seller harmless for any claims relating to such factors.

MILLER CHEMICAL & FERTILIZER, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with

directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or MILLER CHEMICAL & FERTILIZER, LLC and Buyer and User assume the risk of any such use. MILLER CHEMICAL & FERTILIZER, LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall MILLER CHEMICAL & FERTILIZER, LLC or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF MILLER CHEMICAL & FERTILIZER, LLC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF MILLER CHEMICAL & FERTILIZER, LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

MILLER CHEMICAL & FERTILIZER, LLC and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by a duly authorized representative of MILLER CHEMICAL & FERTILIZER, LLC.

Sol-U-Gro®, Nutrileaf and Nutrient Express are registered trademarks of Miller Chemical & Fertilizer, LLC

CYTOKIN® BIOREGULATOR CONCENTRATE

ACTIVE INGREDIENTS:

Cytokinin, as kinetin, based on biological activity.....0.01%

Includes:

6-(4-hydroxy-3-methylbut-*trans*-2-enylamino)-purine

N^6-methylaminopurine,

N^6-dimethylaminopurine,

N^6-isopentenylaminopurine

INERT INGREDIENTS.....**99.99%**

TOTAL.....100.00%

CAUTION

KEEP OUT OF REACH OF CHILDREN

Si usted no entiende la etiqueta, busque a alguien pare que se la explique a usted en detalle.
(if you do not understand the label, find someone to explain it to you in detail)

FIRST AID	
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If Inhaled	• Move person to fresh air. • If person not breathing, call 911 or an ambulance then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call poison control center or doctor for further treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call poison control center or doctor for treatment advice.
Have a product container or label with you when calling a poison control center or doctor, or going for treatment. You may also call 1-800-222-1212 for emergency medical treatment information.	

For chemical emergency: spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300

Manufactured for:

Miller Chemical & Fertilizer, LLC
P.O. Box 333, 120 Radio Road
Hanover, PA 17331

NET CONTENTS:

EPA Reg. No. 90930- EPA Est. No.

Batch Code:_____

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear long-sleeved shirt and long pants and shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining personal protective equipment. If no such instructions for washables, use detergent and hot water. Keep and wash personal protective equipment separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR part 170.240(d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not contaminate water when disposing of equipment washwater or rinsate.

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Before using Cytokin® Bioregulator Concentrate, read and follow the precautions appearing on the label.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State of Tribal agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170.

This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), notification to workers and restricted-entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, waterproof gloves and shoes plus socks.

NON-AGRICULTURE USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Reentry Statement: Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treated area until spray has dried.

Chemigation system

Apply Cytokin® Bioregulator Concentrate only through the following types of systems: sprinkler, including center pivot, lateral move, end tow, side roll, traveler, big gun, solid set, or hand move; or drip (trickle) irrigation systems. Do not apply this product through any other type of system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable about the chemigation systems and responsible for its operation, or under supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone (RPZ), back flow preventer or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction.

There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid- operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Sprinkler Chemigation: The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

The pesticide injection system must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when speeds favor drift beyond area intended for treatment.

Supply pesticide tank agitation, especially if product is to sit in tank for over 6 hours.

Apply Cytokin® Bioregulator Concentrate continuously for the duration of water application or with the first quarter to one-half of the watering period.

Mixing instructions: Fill supply tank to 1/4 to 1/2 full. Add Cytokin® Bioregulator Concentrate and complete filling.

Cytokin® Bioregulator Concentrate
General Information

Cytokin® Bioregulator Concentrate is a plant growth regulator product containing cytokinin plant hormone formulated to improve nutrient utilization, promote bud initiation and development, flower set and retention, improve fruit size, and increase efficiency of production.

Use Cytokin® Bioregulator Concentrate in combination with a well-balanced fertility program and good management practices. The Company recommends the use of soil and tissue testing, and additional nutrients and micronutrients as needed. For maximum benefit, add 0.1 to 0.25 lbs. Calcium to spray solution with a complete fertilizer, such as Nutrileaf (20-20-20) or Sol-U-Gro® (12-48-8) along with chelated micronutrients.

A blanket exemption from the requirement of a tolerance has been issued by the U.S. EPA for the active ingredient in this product. This product is cleared for use on any and all crops.

APPLICATION INSTRUCTIONS

SHAKE WELL BEFORE USING

Good growing conditions are necessary for the maximum utilization of Cytokin® Bioregulator Concentrate. For maximum gain from the application of this product always use a well-balanced plant nutrient program. This product, in any of its applications, is not intended to replace fertilizer or to supply nutrients that would normally be added in a conventional fertility program. Timing of the foliar spray application is very important. Always follow directions precisely. Do not apply when temperatures are above 95°F (36°C) or within eight hours of forecast rain.
For General Use, mix 1 oz. Cytokin® Bioregulator Concentrate with 4 gallons water and spray plant foliage to dampness, almost to runoff. Apply this product in the morning or late afternoon.
For larger areas where aircraft or power driven sprayers are used to apply the spray, follow the specific use rates below. Apply with sufficient water to get thorough foliage coverage, 3 to 10 gallons water per acre for aircraft sprayers and 10 to 100 gallons water per acre for ground driven spray equipment. It is acceptable to use Cytokin® Bioregulator Concentrate with a surfactant. This product can be applied as a mixture with most pesticides. Always run a "jar compatibility test" and treat a small area with any new mixture to test the chemical and crop reaction before large field application.
For transplanting: Drench soil around each plant with a mixture of 1 fl. oz. Cytokin® Bioregulator Concentrate in 4 gallons of water or transplant solution. Spray seedlings with a solution of 1 fl. oz. this product in 4 gallons of water or ½ to one pint per acre 2 to 4 weeks after transplanting and follow with subsequent sprays at instructed intervals throughout the growing season.
Chemigation application: Dilute 1 part Cytokin® Bioregulator Concentrate with at least 5 parts water before adding to the supply tank. Ensure continuous agitation of supply tank during application or injection into the chemigation system. When applying this product through a drip system, apply this product with the first ¼ inch equivalent water. In sprinkler systems, apply this product over the watering cycle.

CROP USE GUIDELINES

For local use recommendations for major and minor crops, contact your PCA or local distributor representative.

Include Calcium EDTA or other highly available calcium source in the tank mix of all foliar applications.

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Asparagus	16 fl. oz.	Spray Cytokin® Bioregulator Concentrate to fern about 2 weeks after last harvest and repeat monthly during fern growth.
Beans – fresh: Edible, green, etc. And peas	8 fl. oz.	First: apply at the 2 to 3 trifoliate leaf stage. Second: 7 to 15 days later.
Beans and peas – dry	8 fl. oz.	Apply when plants have developed 3 to 7 trifoliate leaves, again at early bloom, and again at the beginning of pod fill.
Beets, Sugar	8 to 16 fl. oz. 16 fl. oz. 16 fl. oz.	First application: Apply at the beginning of root enlargement. Second: Apply at beginning of sugar accumulation Final: Apply 4 to 6 weeks before harvest
Broccoli, Cabbage, Cauliflower, Celery, Lettuce	8 fl. oz.	Make 4 to 6 applications at two week intervals beginning at the 3 leaf stage. Applications can be divided to provide weekly applications of 2 to 4 fl. oz./acre applied with other spray or mixtures of insecticides or foliar nutrients.
Carrot and Other root crops	16 fl. oz.	Apply when seedlings have 3 to 6 leaves. Cytokin® Bioregulator Concentrate can be applied with herbicides.
Corn (field)	8 fl. oz.	Apply to prolific (multiple ear) varieties only. Make first application at the 8 to 10 leaf stage. Follow with second application at tasseling.
Corn (sweet and popcorn)	8 fl. oz.	Apply at the 5 to 7 leaf stage. Follow with second application at tasseling.
Cotton	2 to 4 fl. oz. OR 8 fl. oz.	Pinhead square: Apply weekly for 4 weeks. Adjust For band width; OR First Bloom: Apply at first white flower and again two weeks later (mid bloom)

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Cucumber	4 to 32 fl. oz.	Broadcast spray application: To promote early female vigor and enhance yields, apply at the 3 to 6 leaf stage and continue at weekly to 14 day intervals for four applications. Begin banded rates at the 3 to 6 leaf stage at the rate of 4 to 6 fl. oz. for the first application.
Forage crops - legumes or grasses	8 to 16 fl. oz.	Spray Cytokin® Bioregulator Concentrate 4 to 6 weeks after emergence and monthly thereafter. Mature Crop: Spray this product as spring growth begins, 1 week before harvest and again 2 weeks after cutting.
Seed Production	8 to 16 fl. oz.	On established crops: spray Cytokin® Bioregulator Concentrate beginning of inflorescence development (early tillering) and again 2 weeks later. Spray 8 to 16 fl. oz./acre at the beginning of bloom.
Grapes	4 to 16 fl. oz.	General: Cytokin® Bioregulator Concentrate at 4 fl. oz. with foliar nutritional or pesticidal sprays. Sizing: Apply as a tank mix with all Gibberellic Acid sizing sprays. Harvest: Apply this product with high potash fertilizer at 2 to 12 days before harvest to enhance sugar accumulation.
Melons (Cantaloupe, Muskmelon, Watermelon)	4 to 32 fl. oz.	Broadcast spray applications: To promote early female vigor and enhance early yields, apply at the 3 to 6 leaf stage and continue at weekly to 14 day intervals for four applications. To promote sugar development during cool growing conditions and enhance size of melons apply, Cytokin® Bioregulator Concentrate beginning at bloom and continue at weekly to 14 day intervals until 3 weeks before final harvest. Begin banded rates at the 3 to 6 leaf stage at the 4 fl. oz. rate for the first application. To enhance sugar accumulation, spray up to 16 fl. oz./acre at 2 to 10 days before harvest.

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Nut crops Almonds, Pecans, Walnuts, Pistachios, Filberts, Cashews	8 to 32 fl. oz.	Apply Cytokin® Bioregulator Concentrate with 10 lb./acre low-biuret urea at mid-nut fill and again one month later. Add 8 oz. of this product per acre to each zinc or calcium spray. Apply 16 to 32 oz. prior to flowering. Ask your local PCA for specific regional timing.
Onions, Garlic	8 fl. oz.	Spray fall seeded onions in spring at bulb initiation and at weekly to 2 week intervals for 3 to 4 applications. Transplants: see transplant instructions. Spray transplants at bulb initiation (2 to 4 new blades) and again weekly for up to 4 applications.
Peanuts	8 fl. oz.	Apply at the 3rd trifoliate. Repeat at 10 day intervals for four applications.
Peppers (Bell), Pepper (Chiles), Eggplant, Okra	8 fl. oz.	Apply at the 3 to 4 leaf stage. Follow with applications at 7 to 14 day intervals for a total of four to six applications.
Potatoes	Seed Treatment	Dip potato pieces in a solution of 1 part Cytokin® Bioregulator Concentrate to 400 parts water for 20 to 60 seconds. This product can be used with a fungicide treatment. Follow with foliar spray program.
Potatoes (Foliar)	8 fl. oz.	Spray at tuber initiation (about 2-4 weeks after emergence) and again two weeks later.
Rice	8 fl. oz.	Spray at the 3 to 7 leaf stage to increase tillers and panicles or at the PI/PD stage to reduce straight heads and increase panicle size.
Sorghum (Milo)	8 fl. oz.	Apply single spray at the 4 to 7 leaf stage.
Soybeans	8 fl. oz.	Apply during the 3 to 5 trifoliate stage, and each of the R1 and R5 stages.
Spinach and leafy greens	8 fl. oz.	Make 4 to 6 applications at two week intervals beginning at the 3 leaf stage. Applications can be divided to provide weekly application of 4 fl. oz./acre applied with other spray mixtures of insecticide or foliar nutrients.

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Squash: Summer, Winter, Zucchini	4 to 32 fl. oz.	Broadcast spray applications: To promote early Summer, Winter female vigor and enhance yields, apply at the 3 to 6 zucchini leaf stage and continue at weekly to 14 day intervals until 2 weeks before final harvest. Begin banded applications at the 3 to 6 leaf stage at the 4 fl. oz. rate for the first application.
Strawberries	8 to 16 fl. oz.	Transplants: See transplant instructions. Begin spray applications at 1 to 2 weeks after transplanting and continue at 7 to 14 day intervals through the production season.
Sugarcane	16 fl. oz. 32 fl. oz.	First: At beginning of ratoon bud extension. Second: One month after ratoon growth begins. Final: 4 to 6 weeks before harvest.
Tomatoes Fresh Market, Okra	8 fl. oz.	Spray Cytokin® Bioregulator Concentrate at the 6 to 8 leaf stage. Follow with 7 to 14 day applications to promote set and continue production. Make final application about 3 to 4 weeks before final harvest.
Tomatoes (processing)	8 fl. oz.	Apply Cytokin® Bioregulator Concentrate at the beginning of bloom. Make subsequent applications at 2 to 4 week intervals until 3-4 weeks before harvest.
Spring wheat, Barley, Rye and Oats	8 fl. oz.	Apply when plants have 3 to 5 true leaves emerged.
Winter Wheat, Barley and Rye	8 fl. oz.	Spray in the spring after the plants break dormancy but before jointing.
Yams Sweet potatoes	8 to 16 fl. oz.	Dip transplants in a solution of one part Cytokin® Bioregulator Concentrate to 4 parts water. Spray foliage at 2 and 4 weeks after transplanting.
All other crops	8 to 32 fl. oz.	Contact your local PCA or Distributor representative for specific crop uses.

ALL Fruits: Apple, Cherry, Citrus (Orange, Lemon, etc.), Banana, Stone fruit (Peach, Plum, etc.), Pear, Mango, Papaya, Pineapple

Transplants: Follow general transplant instructions.

Fruit trees in production: Spray fruit trees with a solution of 1 fl. oz. Cytokin® Bioregulator Concentrate in 4 gallons of water (or 1 to 2 pints this product/acre) at the following growth stages:

1. At bud break to increase pollination efficiency. (This product will not harm bees or pollinating insects);
2. At 1 week after petal fall to promote cell division;
3. At 1 to 2 weeks before fruit drop to reduce physiological stress and reduce fruit drop;
4. At 20 to 30 days after petal fall to increase fruit size.
5. Monthly during fruit growth and development to promote nutrient translocation to produce larger and better quality fruit.

Apply this product with foliar nutrients, micronutrients or secondary nutrient sprays such as calcium, iron, and zinc.

GRAPES (Table and Wine)

Spray with a solution of 4 to 16 ounces Cytokin® Bioregulator Concentrate per acre at the following growing stages:

First: Apply at the 12to 18 inch cane stage to increase bunch size and length, and to support the flowers on the cluster.

Second: Apply during bloom to improve berry set.

Third: Apply during berry set to promote berry development.

Fourth: Apply 4 weeks before harvest to promote sugar accumulation and storage.

A light amount of an appropriate foliar calcium, such as Miller Cell Force®, should be applied with the above applications of this product on grapes. Apply foliar potash (crop finisher), such as Miller Sugar Express® 4-10-40 or Miller Crop Finisher® 4-2-41 with the fourth application to increase sugar storage.

When using foliar nutrients with this product, use materials and application timings that have shown they will not damage the vines or the berries.

Hydroponic Operations

Including but not limited to Vegetables, Herbs and Spices. In substrate culture systems, apply Cytokin® Bioregulator Concentrate continuously with each fertigation cycle. In closed systems, this product should be reapplied every 7 to 14 days. Recommended rates of 0.2 to 0.4 fluid ounces per 100 gallons of water.

Nursery and Greenhouse Use

To promote bud differentiation, cell division, root induction and growth and to reduce apical dominance. Use Cytokin® Bioregulator Concentrate in your watering program or as a foliar spray.

Propagation of Cuttings: Dip cuttings in rooting hormone powder or solution and stick in rooting medium. Spray or mist cuttings with a solution of 2 fl. oz. Cytokin® Bioregulator Concentrate to 4 gallons water (2 qt./100 gallons) at weekly intervals until root buds initiate. Then spray at 2 to 4 week intervals.

Transplanting: Add 2 fl. oz. Cytokin® Bioregulator Concentrate per 4 gallons of transplant solution (fertilizer-water). Drench root zone. Follow with spray to foliage or add through irrigation system at 2 to 4 week intervals at the rate of 2 quarts per 100 gallons.

Production: To increase growth rate, improve quality and resilience of nursery and greenhouse crops, add 2 fl. oz. Cytokin® Bioregulator Concentrate per 4 gallons (2 quart/100 gallons) of fertilizer or water solution and apply through the irrigation system or via foliar spray.

Nutritional Deficiencies: To promote rapid uptake and correction of nutrient deficiencies in ornamentals and turf, add Cytokin® Bioregulator Concentrate to Iron, Nitrogen fertilizers, zinc or other nutrient solutions at the rate of 2 fl. oz. per 4 gallons (2 qt./128 gallons). Apply as foliar or soil drench.

TURF

Spring application: Make an early application of 1 to 2 fl. oz. Cytokin® Bioregulator Concentrate per 1000 sq. ft. to promote tiller, rhizome or stolon growth, to develop a deep root system, and to give the turf a rapid start once winter dormancy is broken and growth begins. Continue monthly 2 fl. oz./1000 sq. ft. applications throughout spring and summer. Spring application is important to develop a deep root system which will condition the turf and reduce the stress of disease and summer heat or low rainfall. Apply this product with iron sulfate for maximum root growth response.

Fall Application: Two to three applications of Cytokin® Bioregulator Concentrate (1 to 2 fl. oz. per 1000 sq. ft.) should be made in the fall beginning about eight weeks before turf becomes dormant (eight weeks before first frost date in the northern states) to promote root growth and provide grass with the vigor to better endure the stress of winter (reduce winter kill) and improve survival of a good healthy turf for the following spring.

Golf Greens, Fairways, Football and Soccer Fields and Baseball Infields and outfields: At the beginning of spring growth apply 2 to 4 fl. oz. per 1000 square feet at the breaking of dormancy. Make successive maintenance applications of 1 to 2 fl. oz. per 1000 sq. ft. at monthly intervals or as needed to maintain root growth, tillering, appearance and vigor throughout the growing season. During periods of intense use apply 1 to 2 fl. oz. per 1000 sq. feet weekly to the greens, infield or playing field to maintain root structure and renew growth and vigor between games. Make three applications of 1 fl. oz. per 1000 sq. ft. at 2 week intervals in the fall beginning about eight (8) weeks before turf becomes dormant to promote root growth and increase winter stamina to reduce winter kill.

Sod: Spray Cytokin® Bioregulator Concentrate to newly laid sod at 1 to 2 fl. oz. per 1000 sq. ft. to promote rooting and increase the rate of sod establishment. Maintain growth and vigor with monthly applications of 1 to 2 fl. oz. per 1000 square feet.

Sod Farming: Spray Cytokin® Bioregulator Concentrate at 1 to 2 pints/acre monthly to sod fields to promote root, tiller and rhizome growth and to bring the crop to harvest more quickly. Maintain accelerated growth with this product at 1 to 2 pints per acre at 2 to 4 week intervals or as needed. Spray this product at 1 to 2 pints per acre to sod 1 to 4 days before harvesting to initiate new root growth and speed up establishment when sod is laid.

Lawns, Playgrounds, Parks, Recreational Areas, Landscaped Roadways and Cemeteries: Apply 2 fl. oz. per 1000 square feet at the beginning of spring growth to promote a deep root system and tillering to fill sparse areas. Apply 1 to 2 fl. oz. per 1000 square feet monthly to maintain health and vigor of the turf. Application can be made more frequently as needed to condition the turf for stress or for periods of heavy use.

Nutritional sprays: For better color response from nitrogen, iron, sulfur, zinc and other nutrient sprays use 1 to 2 pt. Cytokin® Bioregulator Concentrate per acre with nutrient spray solution. For greens or smaller area, add 1 to 2 fl. oz. Cytokin® Bioregulator Concentrate per 3 to 5 gallons spray solution.

Established Trees and Shrubs: Spray 2 to 4 pints per acre, or a mixture of 2 oz. Cytokin® Bioregulator Concentrate to 4 gallons water to thoroughly wet the foliage at any or all of the following growth stages:

1. Early spring to promote bud initiation;
2. At bud break;
3. At terminal calyx;
4. Early to mid-fall.

For best results apply this product with foliar nutrients, micronutrients or secondary nutrient sprays such as calcium, iron, and zinc.

LANDSCAPE MANAGEMENT (see Turf uses also)
Bedding Plants: Spray bedding plants at 2 to 4 week intervals with a solution of 2 fl. oz. Cytokin® Bioregulator Concentrate per 4 gallons water (2 quart per 128 gallons), fungicide or nutrient spray to promote growth, flowering and maximum color development.

Lawn Care: Spray Cytokin® Bioregulator Concentrate to lawns at the rate of 1 fl. oz. per 1000 sq. ft. This product can be added to liquid fertilizer, insecticide, fungicide, or herbicide sprays.

Transplanting of trees, shrubs or bedding plants: See transplanting instructions under nursery use.

Maintenance: To promote growth and reduce stress from drought, disease or nutrient deficiency. Spray Cytokin® Bioregulator Concentrate to foliage at the rate of 2 fl. oz. per 4 gallons of water or fertilizer or pesticide solution (2 quart per 128 gallons).

Nutritional Deficiencies: To promote rapid uptake and correction of nutrient deficiencies in ornamentals and turf, add Cytokin® Bioregulator Concentrate to iron, nitrogen fertilizers, zinc or other nutrient spray solutions at the rate of 2 fl. oz. per 4 gallons (2 qt./128 gallons). Apply as a foliar spray or soil drench.

Root Feeding: Mix Cytokin® Bioregulator Concentrate with root feeding solutions at the rate of 2 fl. oz. per 4 gallons of nutrient solution (2 quart per 128 gallons)

Non-Bearing Use for TREES, FRUITS, NUTS, BERRIES, SHRUBS AND WOODY ORNAMENTALS:
To aid in propagation of trees, fruits, berries, soft wood cuttings, shrubs and woody ornamentals and to reduce transplant shock, to promote growth and vigor and reduce stress in non-bearing fruit trees such as apple, peach; berry and vine crops such as cranberries; evergreen trees such as spruce, fir, pine; deciduous trees such as birch, elm, maple; flowering plants and shrubs such as poinsettia, rose, azalea, rhododendron, crepe myrtle; and for other flowering and non-flowering shrubs.

New cuttings: Spray Cytokin® Bioregulator Concentrate at 1 to 2 pints per acre on the stems, branches, vines or canes to be propagated from 1 to 7 days before cutting. After planting, spray this product at ½ to 1 pint or apply though the irrigation system at weekly intervals until the plants are established.

Replant areas: Spray the plants before cutting. Then spray Cytokin® Bioregulator Concentrate weekly at ½ to 1 fluid ounce per 1500 square feet and irrigate in. Continue weekly to biweekly applications until plants are established.

Established Trees and Shrubs: Spray 1 to 2 pint Cytokin® Bioregulator Concentrate per acre, or a mixture of 1 fl. oz. of this product to 4 gallons water to thoroughly wet the foliage at any or all of the following growth stages:

1. Early spring to promote bud initiation;
2. At bud break;
3. At terminal calyx;
4. Early to mid-fall.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage

Pesticide Storage: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of reach of children, preferably in locked storage area.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILTY

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials, resistant strains or other influencing factors in the use of the product, which are beyond the control of MILLER CHEMICAL & FERTILIZER, LLC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold MILLER CHEMICAL & FERTILIZER, LLC and Seller harmless for any claims relating to such factors.

MILLER CHEMICAL & FERTILIZER, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with

directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or MILLER CHEMICAL & FERTILIZER, LLC and Buyer and User assume the risk of any such use. MILLER CHEMICAL & FERTILIZER, LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall MILLER CHEMICAL & FERTILIZER, LLC or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF MILLER CHEMICAL & FERTILIZER, LLC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF MILLER CHEMICAL & FERTILIZER, LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

MILLER CHEMICAL & FERTILIZER, LLC and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by a duly authorized representative of MILLER CHEMICAL & FERTILIZER, LLC.

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CYTOKIN® BIOREGULATOR CONCENTRATE

ACTIVE INGREDIENTS:

Cytokinin, as kinetin, based on biological activity.....0.01%

Includes:

6-(4-hydroxy-3-methylbut-*trans*-2-enylamino)-purine

N^6-methylaminopurine,

N^6-dimethylaminopurine,

N^6-isopentenylaminopurine

INERT INGREDIENTS.....**99.99%**

TOTAL.....100.00%

CAUTION

KEEP OUT OF REACH OF CHILDREN

Si usted no entiende la etiqueta, busque a alguien pare que se la explique a usted en detalle.
(if you do not understand the label, find someone to explain it to you in detail)

FIRST AID	
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If Inhaled	• Move person to fresh air. • If person not breathing, call 911 or an ambulance then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call poison control center or doctor for further treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call poison control center or doctor for treatment advice.
Have a product container or label with you when calling a poison control center or doctor, or going for treatment. You may also call 1-800-222-1212 for emergency medical treatment information.	

For chemical emergency: spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300

Manufactured for:
Miller Chemical & Fertilizer, LLC
P.O. Box 333, 120 Radio Road
Hanover, PA 17331

NET CONTENTS:

EPA Reg. No. 90930- EPA Est. No.

Batch Code:_____

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear long-sleeved shirt and long pants and shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining personal protective equipment. If no such instructions for washables, use detergent and hot water. Keep and wash personal protective equipment separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR part 170.240(d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not contaminate water when disposing of equipment washwater or rinsate.

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Before using Cytokin® Bioregulator Concentrate, read and follow the precautions appearing on the label.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State of Tribal agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170.

This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), notification to workers and restricted-entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, waterproof gloves and shoes plus socks.

NON-AGRICULTURE USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Reentry Statement: Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treated area until spray has dried.

Chemigation system

Apply Cytokin® Bioregulator Concentrate only through the following types of systems: sprinkler, including center pivot, lateral move, end tow, side roll, traveler, big gun, solid set, or hand move; or drip (trickle) irrigation systems. Do not apply this product through any other type of system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable about the chemigation systems and responsible for its operation, or under supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone (RPZ), back flow preventer or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction.

There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid- operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Sprinkler Chemigation: The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

The pesticide injection system must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when speeds favor drift beyond area intended for treatment.

Supply pesticide tank agitation, especially if product is to sit in tank for over 6 hours.

Apply Cytokin® Bioregulator Concentrate continuously for the duration of water application or with the first quarter to one-half of the watering period.

Mixing instructions: Fill supply tank to 1/4 to 1/2 full. Add Cytokin® Bioregulator Concentrate and complete filling.

Cytokin® Bioregulator Concentrate
General Information

Cytokin® Bioregulator Concentrate is a plant growth regulator product containing cytokinin plant hormone formulated to improve nutrient utilization, promote bud initiation and development, flower set and retention, improve fruit size, and increase efficiency of production.

Use Cytokin® Bioregulator Concentrate in combination with a well-balanced fertility program and good management practices. The Company recommends the use of soil and tissue testing, and additional nutrients and micronutrients as needed. For maximum benefit, add 0.1 to 0.25 lbs. Calcium to spray solution with a complete fertilizer, such as Nutrileaf (20-20-20) or Sol-U-Gro® (12-48-8) along with chelated micronutrients.

A blanket exemption from the requirement of a tolerance has been issued by the U.S. EPA for the active ingredient in this product. This product is cleared for use on any and all crops.

APPLICATION INSTRUCTIONS

SHAKE WELL BEFORE USING

Good growing conditions are necessary for the maximum utilization of Cytokin® Bioregulator Concentrate. For maximum gain from the application of this product always use a well-balanced plant nutrient program. This product, in any of its applications, is not intended to replace fertilizer or to supply nutrients that would normally be added in a conventional fertility program. Timing of the foliar spray application is very important. Always follow directions precisely. Do not apply when temperatures are above 95°F (36°C) or within eight hours of forecast rain.
For General Use, mix 1 oz. Cytokin® Bioregulator Concentrate with 4 gallons water and spray plant foliage to dampness, almost to runoff. Apply this product in the morning or late afternoon.
For larger areas where aircraft or power driven sprayers are used to apply the spray, follow the specific use rates below. Apply with sufficient water to get thorough foliage coverage. 3 to 10 gallons water per acre for aircraft sprayers and 10 to 100 gallons water per acre for ground driven spray equipment. It is acceptable to use Cytokin® Bioregulator Concentrate with a surfactant. This product can be applied as a mixture with most pesticides. Always run a "jar compatibility test" and treat a small area with any new mixture to test the chemical and crop reaction before large field application.
For transplanting: Drench soil around each plant with a mixture of 1 fl. oz. Cytokin® Bioregulator Concentrate in 4 gallons of water or transplant solution. Spray seedlings with a solution of 1 fl. oz. this product in 4 gallons of water or ½ to one pint per acre 2 to 4 weeks after transplanting and follow with subsequent sprays at instructed intervals throughout the growing season.
Chemigation application: Dilute 1 part Cytokin® Bioregulator Concentrate with at least 5 parts water before adding to the supply tank. Ensure continuous agitation of supply tank during application or injection into the chemigation system. When applying this product through a drip system, apply this product with the first ¼ inch equivalent water. In sprinkler systems, apply this product over the watering cycle.

CROP USE GUIDELINES

For local use recommendations for major and minor crops, contact your PCA or local distributor representative.

Include Calcium EDTA or other highly available calcium source in the tank mix of all foliar applications.

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Asparagus	16 fl. oz.	Spray Cytokin® Bioregulator Concentrate to fern about 2 weeks after last harvest and repeat monthly during fern growth.
Beans – fresh: Edible, green, etc. And peas	8 fl. oz.	First: apply at the 2 to 3 trifoliate leaf stage. Second: 7 to 15 days later.
Beans and peas – dry	8 fl. oz.	Apply when plants have developed 3 to 7 trifoliate leaves, again at early bloom, and again at the beginning of pod fill.
Beets, Sugar	8 to 16 fl. oz. 16 fl. oz. 16 fl. oz.	First application: Apply at the beginning of root enlargement. Second: Apply at beginning of sugar accumulation Final: Apply 4 to 6 weeks before harvest
Broccoli, Cabbage, Cauliflower, Celery, Lettuce	8 fl. oz.	Make 4 to 6 applications at two week intervals beginning at the 3 leaf stage. Applications can be divided to provide weekly applications of 2 to 4 fl. oz./acre applied with other spray or mixtures of insecticides or foliar nutrients.
Carrot and Other root crops	16 fl. oz.	Apply when seedlings have 3 to 6 leaves. Cytokin® Bioregulator Concentrate can be applied with herbicides.
Corn (field)	8 fl. oz.	Apply to prolific (multiple ear) varieties only. Make first application at the 8 to 10 leaf stage. Follow with second application at tasseling.
Corn (sweet and popcorn)	8 fl. oz.	Apply at the 5 to 7 leaf stage. Follow with second application at tasseling.
Cotton	2 to 4 fl. oz. OR 8 fl. oz.	Pinhead square: Apply weekly for 4 weeks. Adjust For band width; OR First Bloom: Apply at first white flower and again two weeks later (mid bloom)

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Cucumber	4 to 32 fl. oz.	Broadcast spray application: To promote early female vigor and enhance yields, apply at the 3 to 6 leaf stage and continue at weekly to 14 day intervals for four applications. Begin banded rates at the 3 to 6 leaf stage at the rate of 4 to 6 fl. oz. for the first application.
Forage crops - legumes or grasses	8 to 16 fl. oz.	Spray Cytokin® Bioregulator Concentrate 4 to 6 weeks after emergence and monthly thereafter. Mature Crop: Spray this product as spring growth begins, 1 week before harvest and again 2 weeks after cutting.
Seed Production	8 to 16 fl. oz.	On established crops: spray Cytokin® Bioregulator Concentrate beginning of inflorescence development (early tillering) and again 2 weeks later. Spray 8 to 16 fl. oz./acre at the beginning of bloom.
Grapes	4 to 16 fl. oz.	General: Cytokin® Bioregulator Concentrate at 4 fl. oz. with foliar nutritional or pesticidal sprays. Sizing: Apply as a tank mix with all Gibberellic Acid sizing sprays. Harvest: Apply this product with high potash fertilizer at 2 to 12 days before harvest to enhance sugar accumulation.
Melons (Cantaloupe, Muskmelon, Watermelon)	4 to 32 fl. oz.	Broadcast spray applications: To promote early female vigor and enhance early yields, apply at the 3 to 6 leaf stage and continue at weekly to 14 day intervals for four applications. To promote sugar development during cool growing conditions and enhance size of melons apply, Cytokin® Bioregulator Concentrate beginning at bloom and continue at weekly to 14 day intervals until 3 weeks before final harvest. Begin banded rates at the 3 to 6 leaf stage at the 4 fl. oz. rate for the first application. To enhance sugar accumulation, spray up to 16 fl. oz./acre at 2 to 10 days before harvest.

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Nut crops Almonds, Pecans, Walnuts, Pistachios, Filberts, Cashews	8 to 32 fl. oz.	Apply Cytokin® Bioregulator Concentrate with 10 lb./acre low-biuret urea at mid-nut fill and again one month later. Add 8 oz. of this product per acre to each zinc or calcium spray. Apply 16 to 32 oz. prior to flowering. Ask your local PCA for specific regional timing.
Onions, Garlic	8 fl. oz.	Spray fall seeded onions in spring at bulb initiation and at weekly to 2 week intervals for 3 to 4 applications. Transplants: see transplant instructions. Spray transplants at bulb initiation (2 to 4 new blades) and again weekly for up to 4 applications.
Peanuts	8 fl. oz.	Apply at the 3rd trifoliate. Repeat at 10 day intervals for four applications.
Peppers (Bell), Pepper (Chiles), Eggplant, Okra	8 fl. oz.	Apply at the 3 to 4 leaf stage. Follow with applications at 7 to 14 day intervals for a total of four to six applications.
Potatoes	Seed Treatment	Dip potato pieces in a solution of 1 part Cytokin® Bioregulator Concentrate to 400 parts water for 20 to 60 seconds. This product can be used with a fungicide treatment. Follow with foliar spray program.
Potatoes (Foliar)	8 fl. oz.	Spray at tuber initiation (about 2-4 weeks after emergence) and again two weeks later.
Rice	8 fl. oz.	Spray at the 3 to 7 leaf stage to increase tillers and panicles or at the PI/PD stage to reduce straight heads and increase panicle size.
Sorghum (Milo)	8 fl. oz.	Apply single spray at the 4 to 7 leaf stage.
Soybeans	8 fl. oz.	Apply during the 3 to 5 trifoliate stage, and each of the R1 and R5 stages.
Spinach and leafy greens	8 fl. oz.	Make 4 to 6 applications at two week intervals beginning at the 3 leaf stage. Applications can be divided to provide weekly application of 4 fl. oz./acre applied with other spray mixtures of insecticide or foliar nutrients.

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Squash: Summer, Winter, Zucchini	4 to 32 fl. oz.	Broadcast spray applications: To promote early Summer, Winter female vigor and enhance yields, apply at the 3 to 6 zucchini leaf stage and continue at weekly to 14 day intervals until 2 weeks before final harvest. Begin banded applications at the 3 to 6 leaf stage at the 4 fl. oz. rate for the first application.
Strawberries	8 to 16 fl. oz.	Transplants: See transplant instructions. Begin spray applications at 1 to 2 weeks after transplanting and continue at 7 to 14 day intervals through the production season.
Sugarcane	16 fl. oz. 32 fl. oz.	First: At beginning of ratoon bud extension. Second: One month after ratoon growth begins. Final: 4 to 6 weeks before harvest.
Tomatoes Fresh Market, Okra	8 fl. oz.	Spray Cytokin® Bioregulator Concentrate at the 6 to 8 leaf stage. Follow with 7 to 14 day applications to promote set and continue production. Make final application about 3 to 4 weeks before final harvest.
Tomatoes (processing)	8 fl. oz.	Apply Cytokin® Bioregulator Concentrate at the beginning of bloom. Make subsequent applications at 2 to 4 week intervals until 3-4 weeks before harvest.
Spring wheat, Barley, Rye and Oats	8 fl. oz.	Apply when plants have 3 to 5 true leaves emerged.
Winter Wheat, Barley and Rye	8 fl. oz.	Spray in the spring after the plants break dormancy but before jointing.
Yams Sweet potatoes	8 to 16 fl. oz.	Dip transplants in a solution of one part Cytokin® Bioregulator Concentrate to 4 parts water. Spray foliage at 2 and 4 weeks after transplanting.
All other crops	8 to 32 fl. oz.	Contact your local PCA or Distributor representative for specific crop uses.

ALL Fruits: Apple, Cherry, Citrus (Orange, Lemon, etc.), Banana, Stone fruit (Peach, Plum, etc.), Pear, Mango, Papaya, Pineapple

Transplants: Follow general transplant instructions.

Fruit trees in production: Spray fruit trees with a solution of 1 fl. oz. Cytokin® Bioregulator Concentrate in 4 gallons of water (or 1 to 2 pints this product/acre) at the following growth stages:

1. At bud break to increase pollination efficiency. (This product will not harm bees or pollinating insects);
2. At 1 week after petal fall to promote cell division;
3. At 1 to 2 weeks before fruit drop to reduce physiological stress and reduce fruit drop;
4. At 20 to 30 days after petal fall to increase fruit size.
5. Monthly during fruit growth and development to promote nutrient translocation to produce larger and better quality fruit.

Apply this product with foliar nutrients, micronutrients or secondary nutrient sprays such as calcium, iron, and zinc.

GRAPES (Table and Wine)

Spray with a solution of 4 to 16 ounces Cytokin® Bioregulator Concentrate per acre at the following growing stages:

First: Apply at the 12 to 18 inch cane stage to increase bunch size and length, and to support the flowers on the cluster.

Second: Apply during bloom to improve berry set.

Third: Apply during berry set to promote berry development.

Fourth: Apply 4 weeks before harvest to promote sugar accumulation and storage.

A light amount of an appropriate foliar calcium, such as Miller Cell Force®, should be applied with the above applications of this product on grapes. Apply foliar potash (crop finisher), such as Miller Sugar Express® 4-10-40 or Miller Crop Finisher® 4-2-41 with the fourth application to increase sugar storage.

When using foliar nutrients with this product, use materials and application timings that have shown they will not damage the vines or the berries.

Hydroponic Operations

Including but not limited to Vegetables, Herbs and Spices. In substrate culture systems, apply Cytokin® Bioregulator Concentrate continuously with each fertigation cycle. In closed systems, this product should be reapplied every 7 to 14 days. Recommended rates of 0.2 to 0.4 fluid ounces per 100 gallons of water.

Nursery and Greenhouse Use

To promote bud differentiation, cell division, root induction and growth and to reduce apical dominance. Use Cytokin® Bioregulator Concentrate in your watering program or as a foliar spray.

Propagation of Cuttings: Dip cuttings in rooting hormone powder or solution and stick in rooting medium. Spray or mist cuttings with a solution of 2 fl. oz. Cytokin® Bioregulator Concentrate to 4 gallons water (2 qt./100 gallons) at weekly intervals until root buds initiate. Then spray at 2 to 4 week intervals.

Transplanting: Add 2 fl. oz. Cytokin® Bioregulator Concentrate per 4 gallons of transplant solution (fertilizer-water). Drench root zone. Follow with spray to foliage or add through irrigation system at 2 to 4 week intervals at the rate of 2 quarts per 100 gallons.

Production: To increase growth rate, improve quality and resilience of nursery and greenhouse crops, add 2 fl. oz. Cytokin® Bioregulator Concentrate per 4 gallons (2 quart/100 gallons) of fertilizer or water solution and apply through the irrigation system or via foliar spray.

Nutritional Deficiencies: To promote rapid uptake and correction of nutrient deficiencies in ornamentals and turf, add Cytokin® Bioregulator Concentrate to Iron, Nitrogen fertilizers, zinc or other nutrient solutions at the rate of 2 fl. oz. per 4 gallons (2 qt./128 gallons). Apply as foliar or soil drench.

TURF

Spring application: Make an early application of 1 to 2 fl. oz. Cytokin® Bioregulator Concentrate per 1000 sq. ft. to promote tiller, rhizome or stolon growth, to develop a deep root system, and to give the turf a rapid start once winter dormancy is broken and growth begins. Continue monthly 2 fl. oz./1000 sq. ft. applications throughout spring and summer. Spring application is important to develop a deep root system which will condition the turf and reduce the stress of disease and summer heat or low rainfall. Apply this product with iron sulfate for maximum root growth response.

Fall Application: Two to three applications of Cytokin® Bioregulator Concentrate (1 to 2 fl. oz. per 1000 sq. ft.) should be made in the fall beginning about eight weeks before turf becomes dormant (eight weeks before first frost date in the northern states) to promote root growth and provide grass with the vigor to better endure the stress of winter (reduce winter kill) and improve survival of a good healthy turf for the following spring.

Golf Greens, Fairways, Football and Soccer Fields and Baseball Infields and outfields: At the beginning of spring growth apply 2 to 4 fl. oz. per 1000 square feet at the breaking of dormancy. Make successive maintenance applications of 1 to 2 fl. oz. per 1000 sq. ft. at monthly intervals or as needed to maintain root growth, tillering, appearance and vigor throughout the growing season. During periods of intense use apply 1 to 2 fl. oz. per 1000 sq. feet weekly to the greens, infield or playing field to maintain root structure and renew growth and vigor between games. Make three applications of 1 fl. oz. per 1000 sq. ft. at 2 week intervals in the fall beginning about eight (8) weeks before turf becomes dormant to promote root growth and increase winter stamina to reduce winter kill.

Sod: Spray Cytokin® Bioregulator Concentrate to newly laid sod at 1 to 2 fl. oz. per 1000 sq. ft. to promote rooting and increase the rate of sod establishment. Maintain growth and vigor with monthly applications of 1 to 2 fl. oz. per 1000 square feet.

Sod Farming: Spray Cytokin® Bioregulator Concentrate at 1 to 2 pints/acre monthly to sod fields to promote root, tiller and rhizome growth and to bring the crop to harvest more quickly. Maintain accelerated growth with this product at 1 to 2 pints per acre at 2 to 4 week intervals or as needed. Spray this product at 1 to 2 pints per acre to sod 1 to 4 days before harvesting to initiate new root growth and speed up establishment when sod is laid.

Lawns, Playgrounds, Parks, Recreational Areas, Landscaped Roadways and Cemeteries: Apply 2 fl. oz. per 1000 square feet at the beginning of spring growth to promote a deep root system and tillering to fill sparse areas. Apply 1 to 2 fl. oz. per 1000 square feet monthly to maintain health and vigor of the turf. Application can be made more frequently as needed to condition the turf for stress or for periods of heavy use.

Nutritional sprays: For better color response from nitrogen, iron, sulfur, zinc and other nutrient sprays use 1 to 2 pt. Cytokin® Bioregulator Concentrate per acre with nutrient spray solution. For greens or smaller area, add 1 to 2 fl. oz. Cytokin® Bioregulator Concentrate per 3 to 5 gallons spray solution.

Established Trees and Shrubs: Spray 2 to 4 pints per acre, or a mixture of 2 oz. Cytokin® Bioregulator Concentrate to 4 gallons water to thoroughly wet the foliage at any or all of the following growth stages:
1. Early spring to promote bud initiation;
2. At bud break;
3. At terminal calyx;
4. Early to mid-fall.

For best results apply this product with foliar nutrients, micronutrients or secondary nutrient sprays such as calcium, iron, and zinc.

LANDSCAPE MANAGEMENT (see Turf uses also)
Bedding Plants: Spray bedding plants at 2 to 4 week intervals with a solution of 2 fl. oz. Cytokin® Bioregulator Concentrate per 4 gallons water (2 quart per 128 gallons), fungicide or nutrient spray to promote growth, flowering and maximum color development.

Lawn Care: Spray Cytokin® Bioregulator Concentrate to lawns at the rate of 1 fl. oz. per 1000 sq. ft. This product can be added to liquid fertilizer, insecticide, fungicide, or herbicide sprays.

Transplanting of trees, shrubs or bedding plants: See transplanting instructions under nursery use.

Maintenance: To promote growth and reduce stress from drought, disease or nutrient deficiency. Spray Cytokin® Bioregulator Concentrate to foliage at the rate of 2 fl. oz. per 4 gallons of water or fertilizer or pesticide solution (2 quart per 128 gallons).

Nutritional Deficiencies: To promote rapid uptake and correction of nutrient deficiencies in ornamentals and turf, add Cytokin® Bioregulator Concentrate to iron, nitrogen fertilizers, zinc or other nutrient spray solutions at the rate of 2 fl. oz. per 4 gallons (2 qt./128 gallons). Apply as a foliar spray or soil drench.

Root Feeding: Mix Cytokin® Bioregulator Concentrate with root feeding solutions at the rate of 2 fl. oz. per 4 gallons of nutrient solution (2 quart per 128 gallons)

Non-Bearing Use for TREES, FRUITS, NUTS, BERRIES, SHRUBS AND WOODY ORNAMENTALS:
To aid in propagation of trees, fruits, berries, soft wood cuttings, shrubs and woody ornamentals and to reduce transplant shock, to promote growth and vigor and reduce stress in non-bearing fruit trees such as apple, peach; berry and vine crops such as cranberries; evergreen trees such as spruce, fir, pine; deciduous trees such as birch, elm, maple; flowering plants and shrubs such as poinsettia, rose, azalea, rhododendron, crepe myrtle; and for other flowering and non-flowering shrubs.

New cuttings: Spray Cytokin® Bioregulator Concentrate at 1 to 2 pints per acre on the stems, branches, vines or canes to be propagated from 1 to 7 days before cutting. After planting, spray this product at ½ to 1 pint or apply though the irrigation system at weekly intervals until the plants are established.

Replant areas: Spray the plants before cutting. Then spray Cytokin® Bioregulator Concentrate weekly at ½ to 1 fluid ounce per 1500 square feet and irrigate in. Continue weekly to biweekly applications until plants are established.

Established Trees and Shrubs: Spray 1 to 2 pint Cytokin® Bioregulator Concentrate per acre, or a mixture of 1 fl. oz. of this product to 4 gallons water to thoroughly wet the foliage at any or all of the following growth stages:

1. Early spring to promote bud initiation;
2. At bud break;
3. At terminal calyx;
4. Early to mid-fall.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage

Pesticide Storage: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of reach of children, preferably in locked storage area.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILTY

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials, resistant strains or other influencing factors in the use of the product, which are beyond the control of MILLER CHEMICAL & FERTILIZER, LLC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold MILLER CHEMICAL & FERTILIZER, LLC and Seller harmless for any claims relating to such factors.

MILLER CHEMICAL & FERTILIZER, LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with

directions under normal use conditions. This warranty does not extend to the use of the product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or MILLER CHEMICAL & FERTILIZER, LLC and Buyer and User assume the risk of any such use. MILLER CHEMICAL & FERTILIZER, LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall MILLER CHEMICAL & FERTILIZER, LLC or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF MILLER CHEMICAL & FERTILIZER, LLC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF MILLER CHEMICAL & FERTILIZER, LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

MILLER CHEMICAL & FERTILIZER, LLC and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by a duly authorized representative of MILLER CHEMICAL & FERTILIZER, LLC.

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CYTOKIN® BIOREGULATOR CONCENTRATE

ACTIVE INGREDIENTS:

Cytokinin, as kinetin, based on biological activity.....0.01%

Includes:

6-(4-hydroxy-3-methylbut-*trans*-2-enylamino)-purine

N^6-methylaminopurine,

N^6-dimethylaminopurine,

N^6-isopentenylaminopurine

INERT INGREDIENTS.....**99.99%**

TOTAL.....100.00%

CAUTION

KEEP OUT OF REACH OF CHILDREN

Si usted no entiende la etiqueta, busque a alguien pare que se la explique a usted en detalle.
(if you do not understand the label, find someone to explain it to you in detail)

FIRST AID	
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If Inhaled	• Move person to fresh air. • If person not breathing, call 911 or an ambulance then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call poison control center or doctor for further treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call poison control center or doctor for treatment advice.
Have a product container or label with you when calling a poison control center or doctor, or going for treatment. You may also call 1-800-222-1212 for emergency medical treatment information.	

For chemical emergency: spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300

Manufactured for:
Miller Chemical & Fertilizer, LLC
P.O. Box 333, 120 Radio Road
Hanover, PA 17331

NET CONTENTS:

EPA Reg. No. 90930- EPA Est. No.

Batch Code:_____

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear long-sleeved shirt and long pants and shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining personal protective equipment. If no such instructions for washables, use detergent and hot water. Keep and wash personal protective equipment separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR part 170.240(d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not contaminate water when disposing of equipment washwater or rinsate.

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Before using Cytokin® Bioregulator Concentrate, read and follow the precautions appearing on the label.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State of Tribal agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170.

This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), notification to workers and restricted-entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: coveralls, waterproof gloves and shoes plus socks.

NON-AGRICULTURE USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Reentry Statement: Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treated area until spray has dried.

Chemigation system

Apply Cytokin® Bioregulator Concentrate only through the following types of systems: sprinkler, including center pivot, lateral move, end tow, side roll, traveler, big gun, solid set, or hand move; or drip (trickle) irrigation systems. Do not apply this product through any other type of system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable about the chemigation systems and responsible for its operation, or under supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone (RPZ), back flow preventer or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction.

There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid- operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Sprinkler Chemigation: The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

The pesticide injection system must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when speeds favor drift beyond area intended for treatment.

Supply pesticide tank agitation, especially if product is to sit in tank for over 6 hours.

Apply Cytokin® Bioregulator Concentrate continuously for the duration of water application or with the first quarter to one-half of the watering period.

Mixing instructions: Fill supply tank to 1/4 to 1/2 full. Add Cytokin® Bioregulator Concentrate and complete filling.

Cytokin® Bioregulator Concentrate

General Information

Cytokin® Bioregulator Concentrate is a plant growth regulator product containing cytokinin plant hormone formulated to improve nutrient utilization, promote bud initiation and development, flower set and retention, improve fruit size, and increase efficiency of production.

Use Cytokin® Bioregulator Concentrate in combination with a well-balanced fertility program and good management practices. The Company recommends the use of soil and tissue testing, and additional nutrients and micronutrients as needed. For maximum benefit, add 0.1 to 0.25 lbs. Calcium to spray solution with a complete fertilizer, such as Nutrileaf (20-20-20) or Sol-U-Gro® (12-48-8) along with chelated micronutrients.

A blanket exemption from the requirement of a tolerance has been issued by the U.S. EPA for the active ingredient in this product. This product is cleared for use on any and all crops.

APPLICATION INSTRUCTIONS

SHAKE WELL BEFORE USING

Good growing conditions are necessary for the maximum utilization of Cytokin® Bioregulator Concentrate. For maximum gain from the application of this product always use a well-balanced plant nutrient program. This product, in any of its applications, is not intended to replace fertilizer or to supply nutrients that would normally be added in a conventional fertility program. Timing of the foliar spray application is very important. Always follow directions precisely. Do not apply when temperatures are above 95°F (36°C) or within eight hours of forecast rain.

For General Use, mix 1 oz. Cytokin® Bioregulator Concentrate with 4 gallons water and spray plant foliage to dampness, almost to runoff. Apply this product in the morning or late afternoon.

For larger areas where aircraft or power driven sprayers are used to apply the spray, follow the specific use rates below. Apply with sufficient water to get thorough foliage coverage, 3 to 10 gallons water per acre for aircraft sprayers and 10 to 100 gallons water per acre for ground driven spray equipment. It is acceptable to use Cytokin® Bioregulator Concentrate with a surfactant. This product can be applied as a mixture with most pesticides. Always run a "jar compatibility test" and treat a small area with any new mixture to test the chemical and crop reaction before large field application.

For transplanting: Drench soil around each plant with a mixture of 1 fl. oz. Cytokin® Bioregulator Concentrate in 4 gallons of water or transplant solution. Spray seedlings with a solution of 1 fl. oz. this product in 4 gallons of water or ½ to one pint per acre 2 to 4 weeks after transplanting and follow with subsequent sprays at instructed intervals throughout the growing season.

Chemigation application: Dilute 1 part Cytokin® Bioregulator Concentrate with at least 5 parts water before adding to the supply tank. Ensure continuous agitation of supply tank during application or injection into the chemigation system. When applying this product through a drip system, apply this product with the first ¼ inch equivalent water. In sprinkler systems, apply this product over the watering cycle.

CROP USE GUIDELINES

For local use recommendations for major and minor crops, contact your PCA or local distributor representative.

Include Calcium EDTA or other highly available calcium source in the tank mix of all foliar applications.

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Asparagus	16 fl. oz.	Spray Cytokin® Bioregulator Concentrate to fern about 2 weeks after last harvest and repeat monthly during fern growth.
Beans – fresh: Edible, green, etc. And peas	8 fl. oz.	First: apply at the 2 to 3 trifoliate leaf stage. Second: 7 to 15 days later.
Beans and peas – dry	8 fl. oz.	Apply when plants have developed 3 to 7 trifoliate leaves, again at early bloom, and again at the beginning of pod fill.
Beets, Sugar	8 to 16 fl. oz. 16 fl. oz. 16 fl. oz.	First application: Apply at the beginning of root enlargement. Second: Apply at beginning of sugar accumulation Final: Apply 4 to 6 weeks before harvest
Broccoli, Cabbage, Cauliflower, Celery, Lettuce	8 fl. oz.	Make 4 to 6 applications at two week intervals beginning at the 3 leaf stage. Applications can be divided to provide weekly applications of 2 to 4 fl. oz./acre applied with other spray or mixtures of insecticides or foliar nutrients.
Carrot and Other root crops	16 fl. oz.	Apply when seedlings have 3 to 6 leaves. Cytokin® Bioregulator Concentrate can be applied with herbicides.
Corn (field)	8 fl. oz.	Apply to prolific (multiple ear) varieties only. Make first application at the 8 to 10 leaf stage. Follow with second application at tasseling.
Corn (sweet and popcorn)	8 fl. oz.	Apply at the 5 to 7 leaf stage. Follow with second application at tasseling.
Cotton	2 to 4 fl. oz. OR 8 fl. oz.	Pinhead square: Apply weekly for 4 weeks. Adjust For band width; OR First Bloom: Apply at first white flower and again two weeks later (mid bloom)

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Cucumber	4 to 32 fl. oz.	Broadcast spray application: To promote early female vigor and enhance yields, apply at the 3 to 6 leaf stage and continue at weekly to 14 day intervals for four applications. Begin banded rates at the 3 to 6 leaf stage at the rate of 4 to 6 fl. oz. for the first application.
Forage crops - legumes or grasses	8 to 16 fl. oz.	Spray Cytokin® Bioregulator Concentrate 4 to 6 weeks after emergence and monthly thereafter. Mature Crop: Spray this product as spring growth begins, 1 week before harvest and again 2 weeks after cutting.
Seed Production	8 to 16 fl. oz.	On established crops: spray Cytokin® Bioregulator Concentrate beginning of inflorescence development (early tillering) and again 2 weeks later. Spray 8 to 16 fl. oz./acre at the beginning of bloom.
Grapes	4 to 16 fl. oz.	General: Cytokin® Bioregulator Concentrate at 4 fl. oz. with foliar nutritional or pesticidal sprays. Sizing: Apply as a tank mix with all Gibberellic Acid sizing sprays. Harvest: Apply this product with high potash fertilizer at 2 to 12 days before harvest to enhance sugar accumulation.
Melons (Cantaloupe, Muskmelon, Watermelon)	4 to 32 fl. oz.	Broadcast spray applications: To promote early female vigor and enhance early yields, apply at the 3 to 6 leaf stage and continue at weekly to 14 day intervals for four applications. To promote sugar development during cool growing conditions and enhance size of melons apply, Cytokin® Bioregulator Concentrate beginning at bloom and continue at weekly to 14 day intervals until 3 weeks before final harvest. Begin banded rates at the 3 to 6 leaf stage at the 4 fl. oz. rate for the first application. To enhance sugar accumulation, spray up to 16 fl. oz./acre at 2 to 10 days before harvest.

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Nut crops Almonds, Pecans, Walnuts, Pistachios, Filberts, Cashews	8 to 32 fl. oz.	Apply Cytokin® Bioregulator Concentrate with 10 lb./acre low-biuret urea at mid-nut fill and again one month later. Add 8 oz. of this product per acre to each zinc or calcium spray. Apply 16 to 32 oz. prior to flowering. Ask your local PCA for specific regional timing.
Onions, Garlic	8 fl. oz.	Spray fall seeded onions in spring at bulb initiation and at weekly to 2 week intervals for 3 to 4 applications. Transplants: see transplant instructions. Spray transplants at bulb initiation (2 to 4 new blades) and again weekly for up to 4 applications.
Peanuts	8 fl. oz.	Apply at the 3rd trifoliate. Repeat at 10 day intervals for four applications.
Peppers (Bell), Pepper (Chiles), Eggplant, Okra	8 fl. oz.	Apply at the 3 to 4 leaf stage. Follow with applications at 7 to 14 day intervals for a total of four to six applications.
Potatoes	Seed Treatment	Dip potato pieces in a solution of 1 part Cytokin® Bioregulator Concentrate to 400 parts water for 20 to 60 seconds. This product can be used with a fungicide treatment. Follow with foliar spray program.
Potatoes (Foliar)	8 fl. oz.	Spray at tuber initiation (about 2-4 weeks after emergence) and again two weeks later.
Rice	8 fl. oz.	Spray at the 3 to 7 leaf stage to increase tillers and panicles or at the PI/PD stage to reduce straight heads and increase panicle size.
Sorghum (Milo)	8 fl. oz.	Apply single spray at the 4 to 7 leaf stage.
Soybeans	8 fl. oz.	Apply during the 3 to 5 trifoliate stage, and each of the R1 and R5 stages.
Spinach and leafy greens	8 fl. oz.	Make 4 to 6 applications at two week intervals beginning at the 3 leaf stage. Applications can be divided to provide weekly application of 4 fl. oz./acre applied with other spray mixtures of insecticide or foliar nutrients.

CROP USE GUIDELINES

CROP	Broadcast Rate/Acre (each application)	TIMING AND FREQUENCY
Squash: Summer, Winter, Zucchini	4 to 32 fl. oz.	Broadcast spray applications: To promote early Summer, Winter female vigor and enhance yields, apply at the 3 to 6 zucchini leaf stage and continue at weekly to 14 day intervals until 2 weeks before final harvest. Begin banded applications at the 3 to 6 leaf stage at the 4 fl. oz. rate for the first application.
Strawberries	8 to 16 fl. oz.	Transplants: See transplant instructions. Begin spray applications at 1 to 2 weeks after transplanting and continue at 7 to 14 day intervals through the production season.
Sugarcane	16 fl. oz. 32 fl. oz.	First: At beginning of ratoon bud extension. Second: One month after ratoon growth begins. Final: 4 to 6 weeks before harvest.
Tomatoes Fresh Market, Okra	8 fl. oz.	Spray Cytokin® Bioregulator Concentrate at the 6 to 8 leaf stage. Follow with 7 to 14 day applications to promote set and continue production. Make final application about 3 to 4 weeks before final harvest.
Tomatoes (processing)	8 fl. oz.	Apply Cytokin® Bioregulator Concentrate at the beginning of bloom. Make subsequent applications at 2 to 4 week intervals until 3-4 weeks before harvest.
Spring wheat, Barley, Rye and Oats	8 fl. oz.	Apply when plants have 3 to 5 true leaves emerged.
Winter Wheat, Barley and Rye	8 fl. oz.	Spray in the spring after the plants break dormancy but before jointing.
Yams Sweet potatoes	8 to 16 fl. oz.	Dip transplants in a solution of one part Cytokin® Bioregulator Concentrate to 4 parts water. Spray foliage at 2 and 4 weeks after transplanting.
All other crops	8 to 32 fl. oz.	Contact your local PCA or Distributor representative for specific crop uses.

ALL Fruits: Apple, Cherry, Citrus (Orange, Lemon, etc.), Banana, Stone fruit (Peach, Plum, etc.), Pear, Mango, Papaya, Pineapple

Transplants: Follow general transplant instructions.

Fruit trees in production: Spray fruit trees with a solution of 1 fl. oz. Cytokin® Bioregulator Concentrate in 4 gallons of water (or 1 to 2 pints this product/acre) at the following growth stages:

1. At bud break to increase pollination efficiency. (This product will not harm bees or pollinating insects);
2. At 1 week after petal fall to promote cell division;
3. At 1 to 2 weeks before fruit drop to reduce physiological stress and reduce fruit drop;
4. At 20 to 30 days after petal fall to increase fruit size.
5. Monthly during fruit growth and development to promote nutrient translocation to produce larger and better quality fruit.

Apply this product with foliar nutrients, micronutrients or secondary nutrient sprays such as calcium, iron, and zinc.

GRAPES (Table and Wine)

Spray with a solution of 4 to 16 ounces Cytokin® Bioregulator Concentrate per acre at the following growing stages:

First: Apply at the 12to 18 inch cane stage to increase bunch size and length, and to support the flowers on the cluster.

Second: Apply during bloom to improve berry set.

Third: Apply during berry set to promote berry development.

Fourth: Apply 4 weeks before harvest to promote sugar accumulation and storage.

A light amount of an appropriate foliar calcium, such as Miller Cell Force®, should be applied with the above applications of this product on grapes. Apply foliar potash (crop finisher), such as Miller Sugar Express® 4-10-40 or Miller Crop Finisher® 4-2-41 with the fourth application to increase sugar storage.

When using foliar nutrients with this product, use materials and application timings that have shown they will not damage the vines or the berries.

Hydroponic Operations

Including but not limited to Vegetables, Herbs and Spices. In substrate culture systems, apply Cytokin® Bioregulator Concentrate continuously with each fertigation cycle. In closed systems, this product should be reapplied every 7 to 14 days. Recommended rates of 0.2 to 0.4 fluid ounces per 100 gallons of water.

Nursery and Greenhouse Use

To promote bud differentiation, cell division, root induction and growth and to reduce apical dominance. Use Cytokin® Bioregulator Concentrate in your watering program or as a foliar spray.

Propagation of Cuttings: Dip cuttings in rooting hormone powder or solution and stick in rooting medium. Spray or mist cuttings with a solution of 2 fl. oz. Cytokin® Bioregulator Concentrate to 4 gallons water (2 qt./100 gallons) at weekly intervals until root buds initiate. Then spray at 2 to 4 week intervals.

Transplanting: Add 2 fl. oz. Cytokin® Bioregulator Concentrate per 4 gallons of transplant solution (fertilizer-water). Drench root zone. Follow with spray to foliage or add through irrigation system at 2 to 4 week intervals at the rate of 2 quarts per 100 gallons.

Production: To increase growth rate, improve quality and resilience of nursery and greenhouse crops, add 2 fl. oz. Cytokin® Bioregulator Concentrate per 4 gallons (2 quart/100 gallons) of fertilizer or water solution and apply through the irrigation system or via foliar spray.

Nutritional Deficiencies: To promote rapid uptake and correction of nutrient deficiencies in ornamentals and turf, add Cytokin® Bioregulator Concentrate to Iron, Nitrogen fertilizers, zinc or other nutrient solutions at the rate of 2 fl. oz. per 4 gallons (2 qt./128 gallons). Apply as foliar or soil drench.

TURF

Spring application: Make an early application of 1 to 2 fl. oz. Cytokin® Bioregulator Concentrate per 1000 sq. ft. to promote tiller, rhizome or stolon growth, to develop a deep root system, and to give the turf a rapid start once winter dormancy is broken and growth begins. Continue monthly 2 fl. oz./1000 sq. ft. applications throughout spring and summer. Spring application is important to develop a deep root system which will condition the turf and reduce the stress of disease and summer heat or low rainfall. Apply this product with iron sulfate for maximum root growth response.

Fall Application: Two to three applications of Cytokin® Bioregulator Concentrate (1 to 2 fl. oz. per 1000 sq. ft.) should be made in the fall beginning about eight weeks before turf becomes dormant (eight weeks before first frost date in the northern states) to promote root growth and provide grass with the vigor to better endure the stress of winter (reduce winter kill) and improve survival of a good healthy turf for the following spring.

Golf Greens, Fairways, Football and Soccer Fields and Baseball Infields and outfields: At the beginning of spring growth apply 2 to 4 fl. oz. per 1000 square feet at the breaking of dormancy. Make successive maintenance applications of 1 to 2 fl. oz. per 1000 sq. ft. at monthly intervals or as needed to maintain root growth, tillering, appearance and vigor throughout the growing season. During periods of intense use apply 1 to 2 fl. oz. per 1000 sq. feet weekly to the greens, infield or playing field to maintain root structure and renew growth and vigor between games. Make three applications of 1 fl. oz. per 1000 sq. ft. at 2 week intervals in the fall beginning about eight (8) weeks before turf becomes dormant to promote root growth and increase winter stamina to reduce winter kill.

Sod: Spray Cytokin® Bioregulator Concentrate to newly laid sod at 1 to 2 fl. oz. per 1000 sq. ft. to promote rooting and increase the rate of sod establishment. Maintain growth and vigor with monthly applications of 1 to 2 fl. oz. per 1000 square feet.

Sod Farming: Spray Cytokin® Bioregulator Concentrate at 1 to 2 pints/acre monthly to sod fields to promote root, tiller and rhizome growth and to bring the crop to harvest more quickly. Maintain accelerated growth with this product at 1 to 2 pints per acre at 2 to 4 week intervals or as needed. Spray this product at 1 to 2 pints per acre to sod 1 to 4 days before harvesting to initiate new root growth and speed up establishment when sod is laid.

Lawns, Playgrounds, Parks, Recreational Areas, Landscaped Roadways and Cemeteries: Apply 2 fl. oz. per 1000 square feet at the beginning of spring growth to promote a deep root system and tillering to fill sparse areas. Apply 1 to 2 fl. oz. per 1000 square feet monthly to maintain health and vigor of the turf. Application can be made more frequently as needed to condition the turf for stress or for periods of heavy use.

Nutritional sprays: For better color response from nitrogen, iron, sulfur, zinc and other nutrient sprays use 1 to 2 pt. Cytokin® Bioregulator Concentrate per acre with nutrient spray solution. For greens or smaller area, add 1 to 2 fl. oz. Cytokin® Bioregulator Concentrate per 3 to 5 gallons spray solution.

Established Trees and Shrubs: Spray 2 to 4 pints per acre, or a mixture of 2 oz. Cytokin® Bioregulator Concentrate to 4 gallons water to thoroughly wet the foliage at any or all of the following growth stages:

1. Early spring to promote bud initiation;
2. At bud break;
3. At terminal calyx;
4. Early to mid-fall.

For best results apply this product with foliar nutrients, micronutrients or secondary nutrient sprays such as calcium, iron, and zinc.

LANDSCAPE MANAGEMENT (see Turf uses also)
Bedding Plants: Spray bedding plants at 2 to 4 week intervals with a solution of 2 fl. oz. Cytokin® Bioregulator Concentrate per 4 gallons water (2 quart per 128 gallons), fungicide or nutrient spray to promote growth, flowering and maximum color development.

Lawn Care: Spray Cytokin® Bioregulator Concentrate to lawns at the rate of 1 fl. oz. per 1000 sq. ft. This product can be added to liquid fertilizer, insecticide, fungicide, or herbicide sprays.

Transplanting of trees, shrubs or bedding plants: See transplanting instructions under nursery use.

Maintenance: To promote growth and reduce stress from drought, disease or nutrient deficiency. Spray Cytokin® Bioregulator Concentrate to foliage at the rate of 2 fl. oz. per 4 gallons of water or fertilizer or pesticide solution (2 quart per 128 gallons).

Nutritional Deficiencies: To promote rapid uptake and correction of nutrient deficiencies in ornamentals and turf, add Cytokin® Bioregulator Concentrate to iron, nitrogen fertilizers, zinc or other nutrient spray solutions at the rate of 2 fl. oz. per 4 gallons (2 qt./128 gallons). Apply as a foliar spray or soil drench.

Root Feeding: Mix Cytokin® Bioregulator Concentrate with root feeding solutions at the rate of 2 fl. oz. per 4 gallons of nutrient solution (2 quart per 128 gallons)

Non-Bearing Use for TREES, FRUITS, NUTS, BERRIES, SHRUBS AND WOODY ORNAMENTALS:
To aid in propagation of trees, fruits, berries, soft wood cuttings, shrubs and woody ornamentals and to reduce transplant shock, to promote growth and vigor and reduce stress in non-bearing fruit trees such as apple, peach; berry and vine crops such as cranberries; evergreen trees such as spruce, fir, pine; deciduous trees such as birch, elm, maple; flowering plants and shrubs such as poinsettia, rose, azalea, rhododendron, crepe myrtle; and for other flowering and non-flowering shrubs.

New cuttings: Spray Cytokin® Bioregulator Concentrate at 1 to 2 pints per acre on the stems, branches, vines or canes to be propagated from 1 to 7 days before cutting. After planting, spray this product at ½ to 1 pint or apply though the irrigation system at weekly intervals until the plants are established.

Replant areas: Spray the plants before cutting. Then spray Cytokin® Bioregulator Concentrate weekly at ½ to 1 fluid ounce per 1500 square feet and irrigate in. Continue weekly to biweekly applications until plants are established.

Established Trees and Shrubs: Spray 1 to 2 pint Cytokin® Bioregulator Concentrate per acre, or a mixture of 1 fl. oz. of this product to 4 gallons water to thoroughly wet the foliage at any or all of the following growth stages:

1. Early spring to promote bud initiation;
2. At bud break;
3. At terminal calyx;
4. Early to mid-fall.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage

Pesticide Storage: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of reach of children, preferably in locked storage area.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILTY

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials, resistant strains or other influencing factors in the use of the product, which are beyond the control of MILLER CHEMICAL & FERTILIZER, LLC or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold MILLER CHEMICAL & FERTILIZER, LLC and Seller harmless for any claims relating to such factors.

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Pages 166-168 - *Confidential Statements of Formula may be entitled to confidential treatment*